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Big03-A: A Supplied-Coefficient Class beside the Negative Coefficient Certificate: evaluation of the named horizon labels at a declared external coefficient, with the unsupplied class, the channel floors and dynamics vacuity unchanged

A declared-class sheet in the Big series of the Enter framework

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Abstract

Big01-A version 5 proves that the three named horizon labels T_{GH}, S_{GH} and N_{GH} are not functions of the data the ledger admits: with the prescribed host, c, G, k_B, the declared data and every report held fixed, they vary injectively with the coefficient in the slot of $\hbar$ (Big01-A thm:Hcert). A rule reproduces them for every account exactly when it receives that coefficient as a supplied input. This sheet writes down, on this sheet only, the declared class in which that input is supplied, and records what follows and what does not.

Two classes. The *unsupplied class* $\mathscr{K}_{\mathrm{un}}$ is the family $\kappa \in (0,\infty)$ at fixed admitted data, exactly as in thm:Hcert. The *supplied class* $\mathscr{K}_{\mathrm{sup}}$ adds one positive real κ_{sup}, named as an external coefficient; the sentence ``κ_{sup} is the SI value of $\hbar$" is a documentary label whose external record is the SI/CODATA value, not a premise (Definition).

Unsupplied half (re-proved here). Theorem restates the negative certificate for $\mathscr{K}_{\mathrm{un}}$ and re-proves it locally: injectivity of the three labels, the fibre bound, infinite worst-case error, and the exact finite-interval error $\frac{H(\kappa_2-\kappa_1)}{4\pi k_B} + \left|y - \frac{H(\kappa_1+\kappa_2)}{4\pi k_B}\right|$ of En08-ST-DSS-CERT thm:EC-coef(b), with the two-point prior as dual witness, its analogues for S_{GH} and N_{GH} (also against randomized rules), an exact refinement criterion, and sharp relative risks $r_T = r_S = \delta$, $r_N = \tanh\left(C\delta/(\kappa_0(1-\delta^2))\right)$ for a calibration of relative width δ.

Supplied half (evaluation only). Proposition is the substitution $T_{\mathrm{sup}} = \kappa_{\mathrm{sup}} H/(2\pi k_B)$, $S_{\mathrm{sup}} = \pi k_B c^5/(\kappa_{\mathrm{sup}} G H^2)$, $N_{\mathrm{sup}} = \exp\left(S_{\mathrm{sup}}/k_B\right)$. At a named sample Hubble rate it evaluates to $T_{\mathrm{sup}} \approx 2.19591 \times 10^{-30}\mathrm{K}$ and $S_{\mathrm{sup}}/k_B \approx 3.31259 \times 10^{122}$; these agree with the supplied evaluation already printed in Big01-A thm:D(c). At the declared example $H_* = 10^{-18}$s^−1 with the CODATA 2022 central G, executed rational Machin enclosures give $1.21566 < T_*/10^{-30}\mathrm{K} < 1.21567$ and $1.08086 < s_*/10^{123} < 1.08087$ (Proposition). It is an evaluation, not a derivation.

Channel and dynamics halves. The floors $1 - 1/d^2$, $1 - 1/d$ and $1 - m/d$ have κ-derivative zero and are unchanged (Proposition). Already-proved thermal-operation errors are instantiated at $\beta_{\mathrm{eval}} = 1/(k_B T_{\mathrm{sup}})$ with exact primal and dual certificates in both Choi signs and both factor orders (Proposition). Gibbs replacement has error $1 - 1/(Z(\beta)Z(-\beta))$ with Bell-ray duals $(1-f)W$ and $\gamma \otimes I - fW$ (Proposition); for a sample qubit gap $\kappa_{\mathrm{sup}} H$, $\beta_{\mathrm{eval}} \cdot \kappa_{\mathrm{sup}} H = 2\pi$ exactly and the error is $(1 + e^{2\pi} + e^{4\pi})/(1 + e^{2\pi})^2$. A temperature and a Hamiltonian still leave exact minimax error $\frac{1}{2}$ for the channel error over thermal operations (Theorem). $\chi^{-1}(G + \Lambda g)$ is weakly conserved for every C^2 metric, every Λ and every coupling $\chi \neq 0$, and the $\hbar$-slot does not occur in it, so the supply selects nothing (Proposition); a nonzero scalar cannot replace a missing distributional construction (Proposition).

Status. O2 stays closed negatively for the unsupplied class; the supplied form is an evaluation. O1 and O6 stay open (Remark). The slots ε_s, U and β are not filled (Remark). The audit found eleven plan corrections (Appendix

); for example, the general-w statement with ε_s is thm:v4-wlabels, not thm:v3-labels, and nuADaM01-A's radiation labels share the slot κ, so they are evaluated by the supply and are not an independent slot. The user draft t295u is integrated item by item (Appendix): every mathematical item is verified, four with corrections, and its unexecuted/unhashed provenance statements are replaced by executed checks and recorded hashes. Checks Big03-01–Big03-31 pass.

Version 3 (requests t336u, t337u, t339u): new findings. Version 3 is insertion-only: every line of version 2 is kept verbatim and in order. It adds Part III, in which every result is proved locally on this sheet's host, with a witness where one is needed and a non-claim after each result. The user's findings draft t339u is the backbone, the plan t336u fixes the scope, and the prediction layer t337u is a separate section. Where two inputs overlap, only the stronger verified form is kept. (i) *Adaptive non-identifiability* (Theorem , Corollary , Proposition). On $\mathscr{K}_{\mathrm{un}}$, every finite adaptive experiment whose complete accessible process is coefficient-blind has a κ-independent law; this covers quantum memory, stopping and postselection. So the two-point, packing ($\le 1/M$), exact finite-range and relative-loss ($= 1$) bounds hold for κ and for the three labels, and no such procedure gives intervals of uniformly positive coverage. The supply is a data refinement: the transcript carries no information about κ_{sup}. Placement blindness and marginal blindness do not imply coefficient blindness; two finite counterexamples show this. (ii) *Thermal identifiability and dimension* (Propositions –). A calibrated Gibbs state at $\beta_\kappa = 2\pi/(\kappa H)$ with a non-scalar κ-free spectrum identifies κ, even through its mean energy. It is itself a coefficient-sensitive datum, whether or not an input is named κ. Finite-copy testers never discriminate two values without error. Identity, energy-conserving unitaries and eigenbasis dephasing have β-free thermal implementations on both classes. Exact equality $\dim \mathscr{H} = N^{(\kappa)}$ holds only on the countable set $\kappa = C/\log D$, while a bound or an integer part gives an interval. (iii) *Split- and vacuum-fibre non-selection* (Theorem , Propositions ,). Both classes are constant on independent source fibres, and the supply removes exactly the κ-factor. A binary attribution keeps minimax error $\frac{1}{2}$, and the vacuum coordinate has box risk $\frac{1}{2}[(b-a) + L(e-d)]$. Nonnegative witnesses exist, and full rank is not the supply of a tensor value. (iv) *Relative-risk alignment* (Proposition , Corollary , Propositions ,). A label $A\kappa^p$ under a window of relative width δ has sharp deterministic and randomized relative risk $\tanh(|p|\operatorname{artanh}\delta)$. This gives δ for this sheet's horizon labels and $\tanh(\frac{3}{4}\operatorname{artanh}\delta) < \delta$ for Big04-A's radiation labels, at the same δ. The exponential label exceeds δ exactly when $C_K/\kappa_0 > (1-\delta^2)\operatorname{artanh}\delta/\delta$. A label orbit is not a confounding orbit unless α is omitted, and a log-linear readout matrix identifies κ iff $e_1 \in \operatorname{row} M$. (v) *Operational cosmological forecasts* (Section), each tagged as a framework theorem, a conditional theorem or a testable hypothesis. Coefficient supply fixes no future access: worst-case error $\frac{1}{2}(1 - 1/d^2)$, with an explicit smooth NEC witness pair, both members of which accelerate. Under detector detailed balance, $\ln(\Gamma_{\mathrm{downarrow}}/\Gamma_{\mathrm{uparrow}})/\Delta$ is gap-independent and gives a sharp κ_{eff} window with the risks of (iv). The family $a = (t/t_0)(1 + \ln(t/t_0))^p$ always accelerates but has an event horizon iff $p > 1$. Under $\varepsilon \in [\varepsilon_-, \varepsilon_+]$ there is a sharp horizon envelope $c/(H(1-\varepsilon_\mp))$ with guaranteed-access and guaranteed-dark regions. Under P_η and $K \ge 2$, a protected code requires $H \le H_{\mathrm{crit}}$. The relaxation closure $\dot{H} = -\alpha(H^2 - H_\infty^2)$ forces $j - 1 = (2\alpha - 3)(q+1)$ and gives the drift $\dot{z} = (1+z)H_0 - H(z)$. (vi) Documentary separations from Big01-A, Big02-A, Big04-A, Big04-A-coeff, Big05-A, DS-OB-1-fibre, En04-A/B, I-D, Hawk05-B and the OpenAI catalogue; none is a bridge. *Why it matters.* ``Evaluation is not a derivation'' becomes a set of checkable statements. Adaptivity, a split declaration and a calibration window each fail to supply the slot, and the supply selects no split, no vacuum term and no future. Every quantitative forecast is the product of a declared bridge and a framework theorem, and it carries its own rejection condition. Every cited label was re-read in the site records. Plan corrections PC8-1 to PC8-22, forecast verdicts X8-1 to X8-22, draft verdicts F9-1 to F9-30 and draft corrections DC-23 to DC-28 are recorded. Among them: the six Big01-A labels named in the plan are absent from its site record (PC8-1); the detector-thermality attribution is corrected (X8-6); and the coding bound needs $K \ge 2$ (X8-12). Checks Big03-61 to Big03-78 pass, and the version-1 and version-2 programs are rerun unchanged. Standing ledger (verbatim): Host A and Host B stay separate. Host C is not created. O.1 stays NOT_CLOSED.

XV-B is not opened. XVI-N is not discharged. N-Ins.4 stays unresolved. H2, I3, J2, and T3 stay unresolved. U6-sel is not moved. Gate 0 stays NOT_SUPPLIED. ST4b stays NOT_SUPPLIED. No quantum coefficient is admitted. No compilation is asserted. No Einstein dynamics, derived metric, spacetime emergence, Page curve, island, vacuum energy, or quantized relational time without an external clock is claimed. A source record is not a premise. The OpenAI catalogue is not a premise. The companion does not verify those proofs.

Bibliographic record

Title	Big03-A: A Supplied-Coefficient Class beside the Negative Coefficient Certificate: evaluation of the named horizon labels at a declared external coefficient, with the unsupplied class, the channel floors and dynamics vacuity unchanged
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Version 2 (requests t297u, t298u, t299u): what is added. Version 2 is insertion-only: every line of version 1 stays verbatim, and superseded sentences receive errata (Appendix). It adds, in Part II (Sections –): (i) separations from the further coefficient certificates Red06-G-DSS-CERT thm:RC-coef (same slot; its entropy-rescaling identity $T\,\mathrm{d}S/\mathrm{d}H = \mathrm{d}(c^5/GH)/\mathrm{d}H$ is κ-blind), V-DST-DSS-CERT prop:VDC-coef (a coupling slot, in the Einstein normalization the inverse of χ) and prop:VDC-coefid9 (selector coefficients), with exact injectivity and interval formulas in χ, varkappa$_0$ and α_i (Proposition); (ii) the vacuum-term separation from thm:v5-vac, re-checked exactly on the flat de Sitter patch, where every member of the four-parameter family is $T + (c_0 - 3H^2 c_G)g$ and κ does not occur (Proposition); (iii) PARTIAL: on the three named thermal channels (identity, complete dephasing in an eigenbasis, Gibbs replacement), each re-proved thermal by an explicit implementation, the error takes exactly the values 0, $1 - 1/d$, $1 - 1/(Z(\beta)Z(-\beta))$, and the restricted minimax is exactly $\frac{1}{2}(1 - 1/(Z(\beta)Z(-\beta))) < \frac{1}{2}$, also over the convex hull (Proposition); the unrestricted thermal class keeps minimax $\frac{1}{2}$, and O6 stays open; (iv) the spectator-lift invariance of $T_{\mathrm{sup}}, S_{\mathrm{sup}}, N_{\mathrm{sup}}$, which produces no κ_{sup} (Proposition); O1 stays open (Remark); (v) the κ-free radiation ratios, which stay κ-free and determine no κ_{sup} (Proposition); (vi) documentary lines for Oai280-A, Oai282-A and Oai069-A. The user draft t298u is folded in as the insertion block (verdicts in Appendix ; every mathematical item verified, nine items with corrections, DC-12–DC-22): nonzero-witness injectivity for the adjacent slots, the rank-one vacuum map, the thermal classification with both directions local, the randomized minimax and the mixture corollary, the correlated balance with $-I_0$, the recovery-floor invariance of the spectator lift and the whole ratio history. The plan t299u adds the actual monoid9 sentence, the Hawk07-F/G/H lines, Oai280-B (a stream slot is not the $\hbar$-slot), Oai282-B (a vacuum Ward identity is not a vacuum energy), Oai280-C, Oai211-A, Oai212-A, and the evaluation of the restricted minimax at β_{eval} (Proposition ; O6 stays open). The audit adds plan corrections PC-12–PC-35 (Appendix), erratum E-8 to version 1 and errata E-R1–E-R8 to the insertion block (Appendix). Checks Big03-32–Big03-60 pass, and Big03-01–Big03-31 are rerun unchanged and pass. No quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet.

Version 3 (requests t336u, t337u, t339u): what is added. Version 3 is insertion-only over the frozen version 2: every line of version 2 appears verbatim and in order (check Big03-70), and nothing is edited. It adds Part III: (i) adaptive acquisition, thermal identifiability and exact dimension assertions (Sections –); (ii) split- and vacuum-fibre non-selection for both classes (Section); (iii) relative-risk alignment, the label orbit and a readout-rank criterion (Section); (iv) documentary separations, plan S S 4–5 (Section); (v) the prediction layer

t337u (Section); (vi) the status, qualifications and ledger (Section); (vii) the audit trail: plan verdicts PC8-1 to PC8-22, forecast verdicts X8-1 to X8-22, draft verdicts F9-1 to F9-30 with corrections DC-23 to DC-28, label and statement verification, a crosswalk, hashes, build and checks Big03-61 to Big03-78 (Appendices –). The plan is binding on scope. The draft t339u supplies the structure of Sections –, and the prediction layer follows them. Every label or claim that an input attributes to another record was checked against that record's site text, and each mismatch is stated as a correction. The supplied/unsupplied definitions (Definition) and every version-1 and version-2 theorem, proof and check are untouched.

Standing ledger, verbatim. Host A and Host B stay separate. Host C is not created. O.1 stays NOT_CLOSED. XV-B is not opened. XVI-N is not discharged. N-Ins.4 stays unresolved. H2, I3, J2, and T3 stay unresolved. U6-sel is not moved. Gate 0 stays NOT_SUPPLIED. ST4b stays NOT_SUPPLIED. No quantum coefficient is admitted. No compilation is asserted. No Einstein dynamics, derived metric, spacetime emergence, Page curve, island, vacuum energy, or quantized relational time without an external clock is claimed. A source record is not a premise. The OpenAI catalogue is not a premise. The companion does not verify those proofs.

Ledger line for this sheet only (plan S 3, verbatim). On this sheet, κ_{sup} is supplied as an external coefficient. The unsupplied class retains the negative certificate of Big01-A texttt *thm* : *Hcert*. Host C is not created. O.1 stays NOT_CLOSED. No emergence or dynamics is claimed. No quantum coefficient is derived. The global line ``No quantum coefficient is admitted" in the standing ledger above is kept as it stands. It is the content of Big01-A thm:Hcert(c) and of every routing note that cites it, and it is not rewritten here or in any other sheet. The supply is a declared input of this sheet; it is not an admission into the ledger's admitted class, and nothing is derived from it.

Citation rule. Citations identify source records only; no proof transfer. Every cited sheet is tagged ``source record; not a premise". Where a statement here uses a fact that a cited sheet also contains, the fact is either re-proved locally or flagged as cited, in which case the statement is *conditional on that record* and marked so. The OpenAI catalogue and the Oai sheets are documentary only; no family proof is verified.

What this sheet refuses (plan S 7).

• a derivation of κ from the host, from any report, from any declared register, or from any Enter instrument;

• the construction of a detector, a Bunch–Davies state, or a type-II_1 algebra from the host;

• an identification of the replacement channel with Hawking radiation, or of the horizon with a quantum-computer box;

• a Page curve, an island, evaporation dynamics, a clustering mechanism, or a particle species;

• the filling of any other open coefficient slot (ε_s, the reservoir β, the early radiation coefficient where it is independent);

• the selection of a metric, a matter model, or a value of Λ; U6-sel is not moved;

• an opening of XV-B, a discharge of XVI-N or N-Ins.4, a closure of O.1, Gate 0 or ST4b, or the creation of Host C;

• a change to the standing refusal line in any existing sheet. Reorganization monoids continue to leave all host functionals invariant, including the now-numerical T_{sup} and S_{sup} once the supply is fixed (Proposition (d)). Dimension growth remains a declared-data operation. Missing is never zero, and partial results are labelled partial.

Release boundary. This is a manuscript source and a build. It is not a registration, a site update or a repository push. No parent sheet is revised; every parent is read from a read-only copy whose sha256 is listed in Appendix . The companion site records were read by read-only GET requests only. The checks are an executed program, and their JSON output is part of the delivery; this includes an execution of the user draft's own exact-arithmetic listing (check Big03-27). No independent review is claimed. This paragraph replaces the draft's ``Release and verification boundary" and ``Provenance limitation" paragraphs (Appendix , DC-2).

Conventions

Labels. For $\kappa > 0$ and a prescribed de Sitter host with Hubble rate $H > 0$, write

$$T^{(\kappa)} = \frac{\kappa H}{2\pi k_B}, \qquad S^{(\kappa)} = \frac{\pi k_B c^5}{\kappa G \hbar^2}, \qquad N^{(\kappa)} = \exp\left(S^{(\kappa)}/k_B\right),$$

as in the paragraph before Big01-A thm:Hcert (source record; not a premise); the named labels of Big01-A def:labels are the values at $\kappa = \hbar$. En08-ST-DSS-CERT writes varkappa for the same slot and DS-OB-1-CERT writes q (Appendix , item PC-5). On this sheet the symbol κ *always* denotes the $\hbar$-slot. The gravitational coupling in $G + \Lambda g = \kappa T$, which the source sheets also write κ, is written χ here (PC-3), as in the user draft. κ_{sup} and κ_{sup} denote the same supplied number, and $\beta_{\mathrm{eval}} = \beta_{\mathrm{eval}} = 2\pi/(\kappa_{\mathrm{sup}} H)$.

Channels. For a channel $T\colon M_d \to M_d$ put $\varepsilon(T) = \frac{1}{2}\|T - \mathrm{id}\|_\diamond$, $\Omega_d = \sum_i |ii\rangle$, $W_d = |\Omega_d\rangle\langle\Omega_d|$ and $J(T) = \sum_{i,j} T(|i\rangle\langle j|) \otimes |i\rangle\langle j|$ (*output first*). Write $C_T = W_d - J(T)$. By Watrous's semidefinite program [WatrousSDP], $\varepsilon(T) = \min\{\|\mathrm{Tr}_{\mathrm{out}} Z\|_\infty : Z \geq 0,\ Z \geq C_T\}$. A *dual certificate for the sign* $\mathrm{id} - T$ is $Z_- \geq 0$ with $Z_- \geq C_T$; its opposite-sign partner is $Z_+ = Z_- - C_T$, with $Z_+ \geq 0$, $Z_+ \geq -C_T$ and $\mathrm{Tr}_{\mathrm{out}} Z_+ = \mathrm{Tr}_{\mathrm{out}} Z_-$. For the *input-first* order, conjugate J, C_T and the witnesses by the factor swap and trace out the output factor in its new position. A *primal certificate* is a pure referenced input ψ with an effect P; the value $\mathrm{Tr}\, P(\psi - (T \otimes \mathrm{id})\psi)$ (sign $\mathrm{id} - T$), or $\mathrm{Tr}\,(I - P)((T \otimes \mathrm{id})\psi - \psi)$ (sign $T - \mathrm{id}$), is a lower bound. Primal = dual is the sandwich of Big02-A lem:sandwich (source record; not a premise). Ky Fan bounds are ceilings, never values; no Ky Fan bound is used on this sheet, since every value instantiated below has a matching construction.

What the certificates say, read in the source copies

The refusal is not a stylistic line; it is the content of the coefficient theorems. Each row below was read in the local read-only copy, which is byte-identical to the live site record (check Big03-01). The verdict column says whether the plan's summary matches; a mismatch is recorded in Appendix with the actual label and statement.

toprule Sheet Label Statement in the source (summary) Verdict

midrule endhead Big01-A v5 thm:Hcert (a) κmapsto$T^{(\kappa)}_{\mathrm{GH}}, S^{(\kappa)}_{\mathrm{GH}}, N^{(\kappa)}_{\mathrm{GH}}$ injective on $(0,\infty)$ with ranges $(0,\infty), (0,\infty), (1,\infty)$; (b) every rule of admitted data has infinite worst-case error; (c) a rule reproduces the named value for every account exactly when it contains $\hbar$ as a supplied input, which the ledger refuses. as plan

Big01-A v5 thm:fibre $\tau = F \circ D$ iff τ is constant on fibres of D; equal data and label distance Δ force error $\geq \Delta/2$. as plan

Big01-A v5 prop:Dyncert (a) $G[g] + \Lambda g$ is conserved for every C^2 metric; ``$G + \Lambda g = \kappa T$'' holds for every $\kappa \neq 0$ and selects nothing without a matter law; (b) futures agreeing on $t \leq 0$ have $\Theta_{tt} = 3(K^2 - H_1^2)$ on $t \geq 1$; (c) two-point minimax $\frac{3}{2}|K_1^2 - K_2^2|$. as plan; κ here is the coupling (PC-3)

Big02-A v6 thm:coef $\partial_\kappa T^{(\kappa)} = H/(2\pi k_B)$, $\partial_\kappa S^{(\kappa)} = -S^{(\kappa)}/\kappa$, $\partial_\kappa \ln N^{(\kappa)} = -S^{(\kappa)}/(k_B \kappa)$; infinite worst-case error; the floors $1 - 1/d^2$, $1 - 1/d$, $1 - m/d$ have κ-derivative zero. as plan

Big02-A v6 thm:v3-labels $w = \frac{1}{3}$ only: $T_{\mathrm{r}} \propto \kappa^{3/4}$, $S_{\mathrm{r}} \propto \kappa^{-3/4}$; U unsupplied $\Rightarrow$ T_{r} alone does not determine κ; the pair does (Jacobian $-\frac{3}{4}$). No ε_s. corrected (PC-1, PC-7)

Big02-A v6 thm:v4-wlabels General $w > 0$: $T_w \propto \kappa^{3w/(1+w)}$, $S_w \propto \kappa^{-3w/(1+w)}$; Jacobian $-3w/(1+w)$; ε_s is a slot of def:v4-labels. the plan's row

En08-ST-DSS-CERT v10 thm:EC-coef Injectivity of $T^{(\mathrm{varkappa})}$; on $[\mathrm{varkappa}_1, \mathrm{varkappa}_2]$ the worst-case error of the rule y is exactly $\frac{H(\mathrm{varkappa}_2 - \mathrm{varkappa}_1)}{4\pi k_B} + \left|y - \frac{H(\mathrm{varkappa}_1 + \mathrm{varkappa}_2)}{4\pi k_B}\right|$, two-point prior as dual witness; proper certificates recover H, not $\hbar H/(2\pi k_B)$. as plan; constants listed are c, ℓ, k_B (PC-5)

DS-OB-1-CERT v5 thm:DS-coef6 Coefficient certificate for T, S, N in the slot q on the prescribed background, with a local form. as plan

nuADaM01-A v5 thm:coefrad $\partial_\kappa \ln T_{\mathrm{rad}} = 3/(4\kappa)$, $\partial_\kappa \ln S_{\mathrm{rad}} = -3/(4\kappa)$; an absolute label value recovers κ; (d) ratios at two times are κ-free; (e) floors have κ-derivative zero. as plan; the slot is shared with the GH labels (PC-2)

nuADaM01-A v5 thm:negid (a) id, $\Delta_d, \mathscr{R}_{I/d}$ thermal at zero Hamiltonians with errors $0, 1-1/d, 1-1/d^2$; (b) with K supplied, $\widehat{S} = \frac{\pi k_B c^5}{GK^2}(\theta/(k_B T_{\mathrm{rad}}))^{4/3}$ reproduces $S_{\mathrm{GH}}^{(\kappa)}$; (c) $S_{\mathrm{rad}}/S_{\mathrm{GH}} = C\kappa^{1/4}$; (d) $G + \Lambda g$ selects no matter model. as plan

I-C-Th-CERT v6 thm:th-cert $Q_L(\beta) = \varepsilon/(1 + e^{-\beta\varepsilon})$ injective in β, range $(\varepsilon/2, \varepsilon)$; energy worst-case error finite, $\geq \varepsilon/4$; entropy-unit bill infinite. as plan; precision PC-6

Hawk07-E-CERT v6, VC-OB-1-CERT v5 prop:s2-vac For every C^2 metric, every Λ and every $\kappa \neq 0$, $\kappa^{-1}(G + \Lambda g)$ is conserved and solves the equation; selects no metric and no Λ without an independent matter law. Identical text in both sheets. as plan; coupling (PC-3)

bottomrule

Admitted data (Big01-A thm:Hcert, preceding paragraph (source record; not a premise)) are the prescribed host (in particular H and c), the classical constants G and k_B, the declared data Δ, and every report $\mathrm{Rep}(H, \Delta)$. The slot of $\hbar$ is outside that class. O2 is closed negatively in the admitted class; its supplied-coefficient form is refused there. O1 (a Hilbert space of dimension $\sim \exp(S_{\mathrm{GH}}/k_B)$) and O6 (a thermal noise model at T_{GH}) stay open (Big01-A, open-items table (source record; not a premise)). O.1 is a different open item and stays NOT_CLOSED.

Corrections to the draft, adopted

The plan records nine corrections to the draft that preceded it. Each is adopted on this sheet as follows.

• The global line ``No quantum coefficient is admitted'' is not rewritten, here or in any existing sheet or routing note. It stays in the standing ledger above; this sheet adds only ``No quantum coefficient is derived'' in its sheet-only line.

• The admission is a new declared class on a new sheet. The unsupplied class keeps the negative certificate verbatim (Theorem); the supplied class evaluates existing formulas at a named external input (Proposition).

• ``Closed for the supplied class'' is not used. Substitution evaluates a formula; it does not derive a label from the host, a report or an Enter instrument. O2 stays closed negatively for $\mathscr{K}_{\mathrm{un}}$ (Remark).

• ``O.1 stays open for physical identification'' is not used. O.1 stays NOT_CLOSED{} for its own reasons; the identification of κ_{sup} with $\hbar$ is a documentary label.

• SI/CODATA is not in the corpus. It is cited as an external documentary record (Documentary record). A change of units rewrites numbers and leaves every κ-free ratio unchanged (Proposition (e)).

• Filling the $\hbar$ slot fills neither ε_s (Big02-A def:v4-labels; plan correction PC-1), nor the reservoir β of I-C-Th-CERT thm:th-cert. On the radiation coefficient of nuADaM01-A thm:coefrad the source differs from the plan, and this is recorded as plan correction PC-2 (Remark).

• Dynamics vacuity does not depend on the value of κ (Proposition). U6-sel is not moved.

• The floors have κ-derivative zero and are unchanged; this is not evidence of a derivation (Proposition).

• The recovery formula of nuADaM01-A thm:negid(b) needs both the late rate K and an early radiation label. It is not a host derivation and gives no κ-free proportionality (Remark).

The declared classes

Definition (Supplied and unsupplied coefficient classes). Fix admitted data $\mathfrak{a}$ in the sense of Section , on a prescribed de Sitter host with Hubble rate $H > 0$.

• The *unsupplied class* $\mathscr{K}_{\mathrm{un}}$ is the family of accounts $\{(\mathfrak{a}, \kappa) : \kappa \in (0, \infty)\}$, exactly as in Big01-A thm:Hcert. A *rule* on $\mathscr{K}_{\mathrm{un}}$ is a map of $\mathfrak{a}$ alone (host-aware or not), or of finitely many admitted readings.

• The *supplied class* $\mathscr{K}_{\mathrm{sup}}$ consists of the accounts $(\mathfrak{a}, \kappa_{\mathrm{sup}})$ in which one positive real number κ_{sup} is *named as a supplied external coefficient*; its data map is $D_{\mathrm{sup}}(\mathfrak{a}, \kappa) = (\mathfrak{a}, \kappa)$, against $D_{\mathrm{un}}(\mathfrak{a}, \kappa) = \mathfrak{a}$ on $\mathscr{K}_{\mathrm{un}}$. A *supplied rule* is a

map of $(\mathfrak{a}, \kappa_{\mathrm{sup}})$.

• The *documentary identification* is the sentence ``κ_{sup} is the SI value of $\hbar$". It is recorded as a label, with SI/CODATA as an external record (Documentary record). It is not a premise, and the sheet does not prove it from the host.

par *Non-claim.* Definition declares an input; it constructs nothing. $\mathscr{K}_{\mathrm{sup}}$ is not a subclass of the admitted data of Big01-A, and declaring it changes no certificate of any other sheet. The number κ_{sup} is not derived from the host, from a report, from a declared register or from an Enter instrument. The external-input class is not a reinterpretation or enlargement of what the parents call admitted data. The coefficient family is a stipulated mathematical family of accounts with a fixed data map, not a claim that an SI defining constant varies experimentally; a permitted external calibration changes the data map and does not invalidate a theorem proved for the original one. Merged with the user draft t295u's def:R-supply. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Documentary record (SI and CODATA 2022). EXTERNAL RECORD; NOT A PREMISE. In the 2019 SI the defining constants are exact: $h = 6.62607015 \times 10^{-34}$Js, c = 299792458ms^−1 and $k_B = 1.380649 \times 10^{-23}$JK^−1 [BIPM]. Hence $\hbar = h/(2\pi)$ is exact but has the non-terminating expansion $1.054571817\ldots \times 10^{-34}$Js; the quotient $h/(2\pi)$ specifies the supplied real. The 2022 CODATA recommended value is $G = 6.67430(15) \times 10^{-11}$m^3kg^−1s^−2, with nonzero standard uncertainty [NIST2022]. All five values were read on the NIST CODATA 2022 pages saved on 2026-10-24 (hashes in Appendix ; parsed offline by check Big03-30). The central value of G is the one used by Big01-A check C-6 (source record; not a premise). Version 1 as first built cited the CODATA 2018 record for G; that citation was not re-verified against a saved record and is replaced by the verified 2022 record (DC-6). On this sheet the values enter only as declared sample numbers in Propositions (c) and . The geometric content is the slot, not the SI number.

par *Non-claim.* The documentary edge to SI/CODATA is a citation of a number, not of a theorem. It is not a premise of any result here, and every exact statement on this sheet holds for an arbitrary positive κ_{sup}. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

The unsupplied half: the negative certificate, re-proved locally

This section re-proves on this sheet what it uses. The proofs below do not import the proofs of Big01-A, Big02-A or En08-ST-DSS-CERT; those sheets contain the same statements and are source records.

Lemma (Fibre criterion and two-point bound). *Let $D\colon \mathscr{X} \to \mathscr{Y}$ and $\tau\colon \mathscr{X} \to \mathbb{R}$.*

• *There is $F\colon \mathscr{Y} \to \mathbb{R}$ with $\tau = F \circ D$ if and only if τ is constant on every fibre $D^{-1}(y)$.*

• *If $D(x_1) = D(x_2)$, then every F satisfies $\max_i |\tau(x_i) - F(D(x_i))| \geq \frac{1}{2}|\tau(x_1) - \tau(x_2)|$, with equality for the midpoint value.*

• *For reals $a \leq b$ and every y, $\max(|y-a|, |y-b|) = \frac{b-a}{2} + |y - \frac{a+b}{2}|$.*

• *If τ is unbounded on one fibre, every F has infinite worst-case error on that fibre.*

Proof. (a) If τ is constant on fibres, put $F(y) = \tau(x)$ for any $x \in D^{-1}(y)$ and F arbitrary off the image; conversely $F \circ D$ is constant on fibres. (c) Put $m = \frac{a+b}{2}$ and $r = \frac{b-a}{2}$. Then $|y-a| = |(y-m) + r|$ and $|y-b| = |(y-m) - r|$, and $\max(|s+r|, |s-r|) = |s| + r$ for $r \geq 0$. (b) F takes one value y on both points; apply (c) with $\{a, b\} = \{\tau(x_1), \tau(x_2)\}$; the minimum over y is r, at $y = m$. (d) On the fibre $F \circ D$ is one number y, and $\sup|y - \tau| = \infty$.

par *Non-claim.* Elementary bookkeeping, re-proved so that nothing below rests on Big01-A thm:fibre or Big02-A lem:fibre (source record; not a premise). Check Big03-04: identity (c) on an exhaustive rational grid, and the criterion (a) on all 64 binary τ over a six-point set with three fibres. Ledger unchanged: no quantum coefficient is

derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (Negative certificate for the unsupplied class). *On $\mathscr{K}_{\mathrm{un}}$ (Definition (a)) write $A = H/(2\pi k_B)$, $B = \pi k_B c^5/(GH^2)$ and $C = B/k_B = \pi c^5/(GH^2)$, so that $T^{(\kappa)} = A\kappa$, $S^{(\kappa)} = B/\kappa$ and $N^{(\kappa)} = e^{C/\kappa}$.*

• Injectivity. $\partial_\kappa T^{(\kappa)} = A > 0$, $\partial_\kappa S^{(\kappa)} = -B/\kappa^2 = -S^{(\kappa)}/\kappa < 0$ and $\partial_\kappa \ln N^{(\kappa)} = -C/\kappa^2 < 0$. The three maps are injective on $(0,\infty)$, with ranges $(0,\infty)$, $(0,\infty)$ and $(1,\infty)$.

• Fibre. All accounts of $\mathscr{K}_{\mathrm{un}}$ lie in one fibre of the admitted data. No rule reproduces $T^{(\kappa)}$, $S^{(\kappa)}$ or $N^{(\kappa)}$ for two values of κ; for $\kappa_1 \neq \kappa_2$ every rule has error at least $\frac{1}{2}|L^{(\kappa_1)} - L^{(\kappa_2)}|$ on the pair, for each label L.

• Infinite worst-case error, also with reports and randomization. On $(0,\infty)$ every rule has infinite worst-case error, for each of the three labels. The same holds after adjoining any collection of coefficient-blind deterministic reports, and a coefficient-blind randomized rule Y has infinite worst-case expected absolute error.

• Finite interval, exact, all three labels. Fix $0 < \kappa_- \le \kappa_+ < \infty$ and let $\ell_L \le u_L$ be the endpoint values: $(\ell_T, u_T) = (A\kappa_-, A\kappa_+)$, $(\ell_S, u_S) = (B/\kappa_+, B/\kappa_-)$, $(\ell_N, u_N) = (e^{C/\kappa_+}, e^{C/\kappa_-})$. Every constant decision $y \in \mathbb{R}$ has exact risk

$$\sup_{\kappa \in [\kappa_-, \kappa_+]} |y - L^{(\kappa)}| = \frac{u_L - \ell_L}{2} + \left|y - \frac{u_L + \ell_L}{2}\right|.$$

The unique minimax decision is $(u_L + \ell_L)/2$, with risk $(u_L - \ell_L)/2$, and the equal-weight endpoint prior is a matching lower certificate for every randomized decision. For $L = T$ this is the En08 formula

$$\sup_{\kappa \in [\kappa_-, \kappa_+]} |y - T^{(\kappa)}| = \frac{H(\kappa_+ - \kappa_-)}{4\pi k_B} + \left|y - \frac{H(\kappa_- + \kappa_+)}{4\pi k_B}\right|.$$

• The supplied input is exactly what is missing. A map of $(\mathfrak{a}, \kappa)$ that reproduces $T^{(\kappa)}$, $S^{(\kappa)}$ or $N^{(\kappa)}$ for every κ recovers κ by below; conversely $(H, \kappa) \mapsto \kappa H/(2\pi k_B)$ is such a map.

Proof. (a) Differentiate; the limits at 0 and ∞ give the ranges. (b) The admitted data do not involve κ, so every account of $\mathscr{K}_{\mathrm{un}}$ has the same data; apply Lemma (b). (c) Lemma (d) with the ranges of (a). Coefficient-blind reports are constant on the fibre, so adjoining any number of them leaves the fibre unchanged. A randomized coefficient-blind output Y has one law throughout the fibre. If $\mathbb{E}|Y| = \infty$, then $\mathbb{E}|Y - L| = \infty$ for every finite L; otherwise $\mathbb{E}|Y - L| \ge |L| - \mathbb{E}|Y|$ by the triangle inequality, which is unbounded since each label has unbounded range. (d) Each label is continuous and monotone in κ, so on the interval it covers exactly $[\ell_L, u_L]$; the convex function $v \mapsto |y - v|$ is maximized on that segment at an endpoint, giving $\max(|y - \ell_L|, |y - u_L|)$, and Lemma (c) gives . Under the endpoint prior, every randomized Y has $\frac{1}{2}\mathbb{E}(|Y - \ell_L| + |Y - u_L|) \ge \frac{1}{2}(u_L - \ell_L)$ by the triangle inequality applied pointwise, so no decision beats $(u_L - \ell_L)/2$ on average, hence not in the worst case; the midpoint attains it, and only the midpoint, by . For $L = T$, $\frac{u - \ell}{2} = \frac{H(\kappa_+ - \kappa_-)}{4\pi k_B}$ and $\frac{u + \ell}{2} = \frac{H(\kappa_- + \kappa_+)}{4\pi k_B}$. (e) Proposition .

par *Non-claim.* This is the negative certificate of Big01-A thm:Hcert and Big02-A thm:coef for $\mathscr{K}_{\mathrm{un}}$, restated, together with the finite-interval formula of En08-ST-DSS-CERT thm:EC-coef(b) (source record; not a premise), all re-proved here; the endpoint prior is a decision-theoretic witness, not a Choi witness. Parts (c) (reports, randomization) and (d) for S and N are local extensions taken from the user draft t295u (Appendix); the sources state the two-point and infinite forms for those labels. Part (d) sharpens the negative certificate; it does not supply a coefficient. The proper certificates of En08-ST-DSS recover H, not $\hbar H/(2\pi k_B)$ (thm:EC-coef(c)). Checks Big03-03, Big03-05, Big03-06 and Big03-19. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Exact refinement criterion). *Let $R(\kappa)$ be any additional datum at fixed $\mathfrak{a}$, with an arbitrary target set. The following are equivalent: (i) $T^{(\kappa)}$ is a function of $(\mathfrak{a}, R(\kappa))$; (ii) the same for $S^{(\kappa)}$; (iii) the same for $N^{(\kappa)}$; (iv)*

there is r with $\kappa = r(\mathfrak{a}, R(\kappa))$ *for every account. The inverse formulas are*

$$\kappa = \frac{2\pi k_B T}{H} = \frac{\pi k_B c^5}{GH^2 S} = \frac{\pi c^5}{GH^2 \ln N}.$$

Proof. Each of (i)–(iii), composed with its inverse in , gives (iv); conversely (iv) permits direct evaluation of all three. Equivalently, by Lemma (a), each injective target is constant on every fibre of the augmented data map. par

Non-claim. The requirement is recoverability of κ, not the spelling of an input coordinate: an exact absolute calibration can encode κ without being named κ (check Big03-20 uses $R(\kappa) = \kappa^3 + 1$). Such a datum is outside $\mathscr{K}_{\mathrm{un}}$, and none is constructed here. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Sharp relative-error certificate). *If a positive label ranges over* $[\ell, u]$, $0 < \ell \le u$, *then* $\inf_{y \in \mathbb{R}} \sup_{L \in [\ell,u]} |y/L - 1| = \frac{u-\ell}{u+\ell}$, *attained at* $y_{\mathrm{rel}} = \frac{2\ell u}{\ell + u}$. *If an external calibration supplies only* $\kappa \in [\kappa_0(1-\delta), \kappa_0(1+\delta)]$, $0 < \delta < 1$, *the sharp relative minimax risks are*

$$r_T = r_S = \delta, \qquad r_N = \tanh\left(\frac{C\delta}{\kappa_0(1-\delta^2)}\right).$$

Finite-precision supply is not exact supply.

Proof. A negative decision is no better than 0. For $y \ge 0$, $y/L - 1$ decreases in L, so the worst relative error is at an endpoint, and the optimum equalizes $y/\ell - 1 = 1 - y/u$. For T and S, the endpoint values give $\frac{u-\ell}{u+\ell} = \delta$. For N, $\ln(u_N/\ell_N) = \frac{2C\delta}{\kappa_0(1-\delta^2)}$ and $\frac{e^v - 1}{e^v + 1} = \tanh\frac{v}{2}$.

Non-claim. The bounds concern a specified calibration interval and a specified loss; infinite absolute risk does not mean every loss has infinite risk. No experimental precision or probability law for the coefficient is assumed. From the user draft t295u, verified; check Big03-21. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (What the interval formula says about calibration). Formula quantifies the refusal: if the coefficient is only known to lie in $[\kappa_-, \kappa_+]$, no instrument of admitted data names $T^{(\kappa)}$ to better than half the width $\frac{H(\kappa_+ - \kappa_-)}{4\pi k_B}$. Supplying κ_{sup} shrinks the interval to a point by declaration, not by measurement (Section); a calibration of relative width δ leaves the relative risks .

Non-claim. An interpretation of Theorem (d); it adds no statement. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

The supplied half: substitution, marked as evaluation

Proposition (Evaluation at the supplied coefficient). *On* $\mathscr{K}_{\mathrm{sup}}$ *(Definition (b)) put*

$$T_{\mathrm{sup}} = T^{(\kappa_{\mathrm{sup}})} = \frac{\kappa_{\mathrm{sup}} H}{2\pi k_B}, \qquad S_{\mathrm{sup}} = S^{(\kappa_{\mathrm{sup}})} = \frac{\pi k_B c^5}{\kappa_{\mathrm{sup}} GH^2}, \qquad N_{\mathrm{sup}} = N^{(\kappa_{\mathrm{sup}})} = \exp(S_{\mathrm{sup}}/k_B).$$

• *Substitution. The supplied rule* $(\mathfrak{a}, \kappa_{\mathrm{sup}}) \mapsto$ *reproduces* $T^{(\kappa)}$, $S^{(\kappa)}$ *and* $N^{(\kappa)}$ *on every account with* $\kappa = \kappa_{\mathrm{sup}}$, *and is the only rule of* $(\mathfrak{a}, \kappa_{\mathrm{sup}})$ *that does so for every value of* κ_{sup} *(Theorem (e)). A rule that does not receive* κ_{sup} *keeps infinite worst-case error on* $\mathscr{K}_{\mathrm{un}}$ *(Theorem (c)).*

• *Comparison across accounts and a* κ*-free product. With* $r = \kappa/\kappa_{\mathrm{sup}}$, $T^{(\kappa)}/T_{\mathrm{sup}} = r$, $S^{(\kappa)}/S_{\mathrm{sup}} = 1/r$ *and* $\ln N^{(\kappa)}/\mathrm{lnN}_{\mathrm{sup}} = 1/r$; $\mathrm{lnN}_{\mathrm{sup}} = S_{\mathrm{sup}}/k_B$. *Moreover* $T_{\mathrm{sup}} S_{\mathrm{sup}} = T^{(\kappa)} S^{(\kappa)} = \frac{c^5}{2GH}$ *for every* κ, *a function of admitted data; it*

does not determine T_{sup} or S_{sup} separately.

• *Numerical evaluation at named samples. With the declared sample numbers of Documentary record , $\kappa_{\mathrm{sup}} = h/(2\pi)$, and the sample Hubble rates $H_0 = 67.36 kms\text{^}{-}1 Mpc\text{^}{-}1$ and $H_\Lambda = H_0\sqrt{0.6847}$ (Planck 2018 parameters, as in Big01-A thm:D(c)* (source record; not a premise)*; $1 Mpc = 3.0856775814913673 \times 10^{22} m$): toprule sample H ($s\text{^}{-}1$) T_{sup} (K) S_{sup}/k_B $\log_{10} N_{\mathrm{sup}}$*

midrule H_0 2.18299×10^{-18} 2.65378×10^{-30} 2.26813×10^{122} 9.85037×10^{121}

H_Λ 1.80635×10^{-18} 2.19591×10^{-30} 3.31259×10^{122} 1.43864×10^{122}

bottomrule (six significant digits, from exact expressions evaluated at 40 digits). At either sample, $\beta_{\mathrm{eval}} := 1/(k_B T_{\mathrm{sup}})$ satisfies $\beta_{\mathrm{eval}} \kappa_{\mathrm{sup}} H = 2\pi$ exactly.

• *Reorganization. Under the monoid $\rho_{n,\nu}(H, q, f) = (H, q + n, f + \nu)$ of Big01-A thm:D4* (source record; not a premise)*, T_{sup}, S_{sup} and N_{sup} are invariant, because they depend on the account only through H and the supplied κ_{sup}; the declared dimension is multiplied by 2^n. Dimension growth stays a declared-data operation. Spectator lifts in the sense of Big02-A cor:v5-monoid likewise leave every quantity of this sheet unchanged.*

• *Units. S_{sup}/k_B is unit-invariant, T_{sup} transforms as a temperature (Remark), and the ratios $T_{\mathrm{sup}}(H_1)/T_{\mathrm{sup}}(H_2) = H_1/H_2$ and $S_{\mathrm{sup}}(H_1)/S_{\mathrm{sup}}(H_2) = H_2^2/H_1^2$ are κ-free.*

Proof. (a) Substitution, and Theorem (c),(e). (b) Divide, and multiply the two formulas in . (c) Exact evaluation; check Big03-07, which also reproduces the four-digit values 2.196×10^{-30}K, 3.313×10^{122} and 4.779×10^{122} of Big01-A check C-6. $\beta_{\mathrm{eval}}\kappa_{\mathrm{sup}}H = \frac{2\pi k_B}{k_B \kappa_{\mathrm{sup}} H}\kappa_{\mathrm{sup}}H = 2\pi$. (d) Inspection of . (e) Dimensional substitution, checks Big03-08 and Big03-28.

par *Non-claim.* This is the formula evaluated at a supplied number. It is not a detector, not a Bunch–Davies state, and not a derivation from the host. Big01-A thm:D(c) already prints the same evaluation at the SI value of $\hbar$ as a ``supplied evaluation" (plan correction PC-4), so the numbers are not new; what is new is the declared class around them. The sample Hubble rates are named sample data, not a host derivation of H. It supplies no detector, state, thermal noise channel or instrument-level determination of the coefficient, and does not turn O2 into a positive host theorem. Parts (b) and (e) are merged with the user draft t295u's prop:R-eval (Appendix). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (One declared numerical example, with rational enclosures). *For a numerical comparison only, declare $H_* = 10^{-18} s\text{^}{-}1$ and $G_0 = 6.67430 \times 10^{-11} m\text{^}3 kg\text{^}{-}1 s\text{^}{-}2$, and use the exact SI values of Documentary record with $\kappa_{\mathrm{sup}} = h/(2\pi)$. H_* is a chosen example, not an observational estimate; G_0 is the CODATA 2022 central value treated as an exact decimal input, not as an exact value of the measured constant. With $s_* = S_*/k_B = \ln N_*$,*

$$T_* = \frac{hH_*}{4\pi^2 k_B}, \qquad s_* = \frac{2\pi^2 c^5}{hG_0 H_*^2}, \qquad S_* = k_B s_*, \qquad N_* = e^{s_*},$$

and

$$1.21566 \times 10^{-30} < T_*/\mathrm{K} < 1.21567 \times 10^{-30},$$

$$1.08086 \times 10^{123} < s_* < 1.08087 \times 10^{123},$$

$$1.49229 \times 10^{100} < S_*/(\mathrm{J\,K^{-1}}) < 1.49230 \times 10^{100},$$

so $\exp(1.08086 \times 10^{123}) < N_* < \exp(1.08087 \times 10^{123})$.

Proof. All displayed inputs are rationals. Machin's identity $\pi = 16\arctan\frac{1}{5} - 4\arctan\frac{1}{239}$ with the alternating series

(twelve terms for $\frac{1}{5}$, four for $\frac{1}{239}$, the first omitted term as remainder bound; an even number of terms is a lower bound) gives $p_- = 3141592653/10^9 < \pi < p_+ = 3141592654/10^9$. With $a_* = hH_*/(4k_B)$ and $b_* = 2c^5/(hG_0H_*^2)$, $a_*/p_+^2 < T_* < a_*/p_-^2$ and $b_*p_-^2 < s_* < b_*p_+^2$; rational comparison gives –. Check Big03-27 *executes* the draft's listing verbatim (all assertions pass) and independently evaluates $T_* = 1.2156624\ldots \times 10^{-30}$K, $s_* = 1.0808651\ldots \times 10^{123}$, $S_* = 1.4922953\ldots \times 10^{100}$JK^−1 at 50 digits, inside the enclosures.

par *Non-claim.* The NIST 2022 CODATA record gives $G = 6.67430(15) \times 10^{-11}$ with nonzero standard uncertainty (Documentary record); the enclosure conditions on the central decimal G_0 and is not a confidence interval. The exponential is kept; no finite decimal expansion of N_* is asserted. From the user draft t295u, verified. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (Units do not supply the missing datum). Under a common change of base-unit sizes with numerical coordinates transforming as $\kappa' = \kappa\lambda_t/(\lambda_M\lambda_L^2)$, $H' = \lambda_t H$, $c' = c\lambda_t/\lambda_L$, $G' = G\lambda_M\lambda_t^2/\lambda_L^3$ and $k_B' = k_B\lambda_\Theta\lambda_t^2/(\lambda_M\lambda_L^2)$, one has $T' = T/\lambda_\Theta$, $S'/k_B' = S/k_B$ and $N' = N$; coefficient-free ratios are unchanged. An account-dependent unit choice that writes the coefficient as one is not a recovery of its value in one fixed common unit system.

par *Non-claim.* The SI identification is external; no change of units converts the unsupplied data map into the supplied one. Check Big03-28 (exact symbolic substitution of the draft's exponents) and Big03-08. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Definition (The separately supplied capacity promise). For $\eta > 0$, a finite full-code declared account of dimension d satisfies P_η when $k_B \ln d \le \mathrm{etaS}_{\mathrm{sup}}$; equivalently, the maximum entropy over *all* density operators on that declared code is at most $\mathrm{etaS}_{\mathrm{sup}}$. This is a promise about the code, the promise P_η of Big01-A thm:D(c) (PC-9), and not a consequence of .

par *Non-claim.* An entropy bound for one selected state is not this promise; a pure state has entropy zero in every finite dimension. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Conditional capacity bound at the supplied value). *CONDITIONAL on the separately supplied promise* P_η *(Definition). Then* $d \le \lfloor e^{\mathrm{etaS}_{\mathrm{sup}}/k_B} \rfloor = \mathrm{lfloorN}_{\mathrm{sup}}^{\eta} \rfloor$*, and every q-qubit memory encoded isometrically into the declared code satisfies*

$$q \le \left\lfloor \frac{\eta S_{\mathrm{sup}}}{k_B \ln 2} \right\rfloor,$$

which for $\eta = 1$ *at the sample* H_Λ *is* $\lfloor 4.77906\ldots \times 10^{122} \rfloor$ *(at* H_0*:* 3.27222×10^{122}*). Without* P_η*, fixing* $(H, c, G, k_B, \kappa_{\mathrm{sup}})$ *imposes no bound: the declared dimension is unbounded on free declared data (Big01-A thm:D(b)* (source record; not a premise)*), and the least n with* $2^{q+n} > N_{\mathrm{sup}}^{\eta}$ *is* $n_B = \max\{0, \lfloor \mathrm{etaS}_{\mathrm{sup}}/(k_B \ln 2) - q \rfloor + 1\}$ *(thm:D4(c)).*

Proof. Exponentiate the promise and use integrality of d. An isometric encoding needs $2^q \le d$, so $q \ln 2 \le \ln d \le \mathrm{etaS}_{\mathrm{sup}}/k_B$; take the integer part. Without the promise the label formulas are unchanged when $\mathbb{C}^d$ is replaced by any $\mathbb{C}^{d'}$. Values: checks Big03-16, Big03-26.

par *Non-claim.* Conditional dimension arithmetic on the promise P_η, which is an input, not a theorem; N_{sup} is a real number and need not be an integer. O1 stays open. No finite Hilbert space is derived from the host, and the supply

of κ_{sup} does not create a host functional bound. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (What reorganizations must preserve). *Let a monoid act on accounts, every generator preserving the prescribed host data* (H, c, G, k_B) *and the supplied* κ_{sup}*. Then every element preserves* $T_{\mathrm{sup}}, S_{\mathrm{sup}}, N_{\mathrm{sup}}$*; in particular the monoid* $\rho_{n,v}$ *of Big01-A thm:D4 does (Proposition (d)). Spectator blindness alone does not imply this preservation. An operation* $d \mapsto nd$*,* $n > 1$*, that preserves the labels need not preserve* P_η*: repeated growth eventually violates any fixed finite bound of Proposition .*

Proof. Each label is a function of the preserved data; induct on word length. A command that ignores spectators but replaces H by $2H$ is spectator-blind and doubles T_{sup}. Finally $n^j d \to \infty$ while N^{η}_{sup} is fixed and finite. Check Big03-26.

par *Non-claim.* The counterexample is not an allowed reorganization of a fixed host; it isolates the missing preservation hypothesis. Dimension growth stays a declared-data operation, and no permission to grow dimensions becomes a physical capacity theorem. From the user draft t295u, verified. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

The channel half: floors unchanged, thermal errors instantiated

Throughout, $\beta_{\mathrm{eval}} := 1/(k_B T_{\mathrm{sup}}) = 2\pi/(\kappa_{\mathrm{sup}} H)$ is an *evaluation argument*. It is not an assertion that an actual reservoir has $\beta_{\mathrm{res}} = \beta_{\mathrm{eval}}$ (Remark); on this sheet β_{eval} and β_{eval} denote the same number.

Proposition (Replacement evaluation with complete certificates). *Let a separately declared Hamiltonian* H *on* $\mathbb{C}^d$ *have eigenvalues* $E_1, \dots, E_d$*, let* $\beta > 0$ *(in particular* $\beta = \beta_{\mathrm{eval}}$*),* $Z(\beta) = \sum_i e^{-\beta E_i}$*,* $\gamma_\beta = e^{-\beta \mathrm{H}}/Z(\beta)$*,* $\lambda_i = e^{-\beta E_i}/Z(\beta)$*,* $\mathfrak{S} = \sum_i \lambda_i^{-1}$ *and* $f = 1/\mathfrak{S}$*. For the Gibbs replacement* $\mathscr{R}_{\gamma_\beta}(X) = \mathrm{Tr}\,(X)\gamma_\beta$*,*

$$\varepsilon(\mathscr{R}_{\gamma_\beta}) = 1 - \frac{1}{Z(\beta)Z(-\beta)} = 1 - f.$$

• *Certificates. The output-first duals* $Z_- = (1-f)W_d$ *(sign* $\mathrm{id} - T$*) and* $Z_+ = \gamma_\beta \otimes I - fW_d = Z_- - C_T$ *(sign* $T - \mathrm{id}$*) are feasible with* $\mathrm{Tr}_{\mathrm{out}} Z_\pm = (1-f)I$*; swap conjugation gives both input-first duals. The input* $\psi = \sum_i \sqrt{p_i}|ii\rangle$*,* $p_i = \lambda_i^{-1}/\mathfrak{S}$*, with effect* $\mathrm{proj}\,\psi$ *has primal value* $1 - f$ *for the sign* $\mathrm{id} - T$*; the complementary effect certifies the opposite sign. The block dual* $Y = \sum_{i \neq j} \lambda_i |ij\rangle\langle ij| \oplus (D_\lambda - f 11^T)$ *of the PG-OB-1-CERT pattern equals* Z_+*.*

• *Sample qubit. For the named sample* $\mathrm{H} = \kappa_{\mathrm{sup}} H \mathrm{proj}\,1$ *at* β_{eval} *(gap* $\kappa_{\mathrm{sup}} H$*,* $\beta_{\mathrm{eval}} \cdot \mathrm{gap} = 2\pi$*,* $x = e^{-2\pi}$*),*

$$\varepsilon(\mathscr{R}_\gamma) = 1 - \frac{x}{(1+x)^2} = \frac{1 + e^{2\pi} + e^{4\pi}}{(1+e^{2\pi})^2} = 1 - \frac{1}{2 + 2\cosh 2\pi} \approx 0.99814.$$

• *Scalar Hamiltonian. If* H *is scalar,* $\gamma = I/d$ *and the error is the floor* $1 - 1/d^2$ *at every* β*; for non-scalar* H *it is strictly larger.*

Proof. On $\mathrm{span}\{|ii\rangle\}$, Z_+ is $D_\lambda - f11^T$, positive by the weighted Cauchy–Schwarz inequality $|\sum_i v_i|^2 \le (\sum_i \lambda_i |v_i|^2)(\sum_i \lambda_i^{-1})$; on the orthogonal complement it is diagonal with entries $\lambda_i > 0$. $Z_- \ge 0$, $Z_- - C_T = Z_+ \ge 0$, and $\mathrm{Tr}_{\mathrm{out}} C_T = 0$, so both partial traces are $(1-f)I$. The replacement output on ψ is $\gamma_\beta \otimes \sum_i p_i \mathrm{proj}\,i$, whose overlap with $\mathrm{proj}\,\psi$ is $\sum_i \lambda_i p_i^2 = f$, so the effect value is $1 - f$, matching the dual. Finally $\mathfrak{S} = \sum_i e^{\beta E_i} Z(\beta) = Z(\beta)Z(-\beta)$. (b) $\lambda = (1, x)/(1+x)$, $\mathfrak{S} = (1+x)^2/x = 2 + 2\cosh 2\pi$. (c) $\mathfrak{S} \ge d^2$ with equality iff $\sigma = I/d$ (AM–HM). Checks Big03-10 (symbolic qubit, every principal minor decided exactly as a rational function of $x > 0$; four duals, two primals) and Big03-24 (general form: symbolic qubit and an exact qutrit, $Z_+ = \gamma \otimes I - fW$ verified entrywise, $\mathfrak{S} = Z(\beta)Z(-\beta)$).

par *Non-claim.* This instantiates the replacement formula of Big01-A thm:Bthermal and PG-OB-1-CERT thm:s2-exact at a supplied argument. The channel, Hamiltonian and implementation are separate declared inputs; the channel is not identified with Hawking radiation, no physical noise model is supplied, and O6 is not closed. Merged with the user draft t295u's prop:R-replacement; the two dual families coincide. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Coefficient-independent floors and a dependent family). *For fixed integers $d \geq 2$, $1 \leq m \leq d$, the floors $1 - 1/d^2$ (replacement by I/d), $1 - 1/d$ (complete dephasing, the shredder floor of I-C-CERT thm:optimum), $1 - m/d$ (flagged m-cut, Big02-A lem:mcut), the floor 0 of the identity, and $1 - 1/(1 + j^2)$ of nuADaM01-A thm:coefrad(e) contain no κ. Their κ-derivative is zero at κ_{sup} as at every other value, and their values at κ_{sup} equal their values on $\mathscr{K}_{\mathrm{un}}$; so is $1 - 1/\Im(\sigma)$ of PG-OB-1-CERT thm:s2-exact for every fixed σ.*

• *Certificates. For* id, $\Delta(X) = \sum_i \mathrm{proj}\, iX \mathrm{proj}\, i$ *and $\mathscr{R}_{I/d}$ the exact errors 0, $1 - 1/d$, $1 - 1/d^2$ are certified by the Bell input and $Z_- = eW_d$, $Z_+ = J - fW_d$, $e = 1 - f$, with $f = 1, 1/d, 1/d^2$; both signs and both orders follow by the conventions.*

• *A dependent comparison family. If a non-scalar* H *is fixed while a comparison family imposes the declared tie $\beta(\kappa) = 2\pi/(\kappa H)$, then the error is strictly decreasing in κ:*

$$\frac{\mathrm{d}}{\mathrm{d}\kappa}\Big(1 - \frac{1}{\Im(\beta(\kappa))}\Big) = -\frac{\beta\, \Im'(\beta)}{\kappa\, \Im(\beta)^2} < 0, \qquad \Im(\beta) = d + 2\sum_{i<j} \cosh\big(\beta(E_i - E_j)\big).$$

Proof. The floor expressions are functions of d, m, j or σ only (check Big03-09). (a) $J = W$, $J = \sum_i |ii\rangle\langle ii|$ and $J = I/d$ respectively; in each case $J - fW \geq 0$, its partial trace is eI, and the Bell overlap is f (check Big03-11, $d = 2, 3$, exact). (b) $\Im'(\beta) = 2\sum_{i<j}(E_i - E_j)\sinh\big(\beta(E_i - E_j)\big) > 0$ for $\beta > 0$ when some $E_i \neq E_j$, and $\beta'(\kappa) = -\beta/\kappa$; check Big03-29 (cosh form and the derivative formula, symbolic, for a three-level spectrum).

par *Non-claim.* The statements of the floors are unchanged; their invariance under the supply is not evidence that the coefficient has been derived, and no floor is a horizon temperature or a GH label. Part (b) concerns a family parameterized through a declared tie, not every channel family; dimension growth can change the floors even though coefficient supply does not. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Thermality at the evaluation argument). *Fix β_{eval} and a separately declared finite Hamiltonian* H*; a thermal operation at β is $X \mapsto \mathrm{Tr}_B[U(X \otimes \gamma_B)U^\dagger]$ with $\gamma_B = e^{-\beta H_B}/Z$ and $[U, \mathrm{H} \otimes I + I \otimes H_B] = 0$.*

• *Gibbs replacement by $\gamma_{\beta_{\mathrm{eval}}}$ is a thermal operation (Big01-A thm:Bthermal* (source record; not a premise)*: bath a copy of the system, U the swap), with the error and certificates of Proposition .*

• *Complete dephasing is a thermal operation at β_{eval} iff* H *is diagonal in the dephasing basis (Red06-G-DSS-CERT prop:RC-deph10* (source record; not a premise)*); error $1 - 1/d$ (Proposition (a)). For the sample $\mathrm{H} = \kappa_{\mathrm{sup}} H \sigma_x$ the computational dephasing moves the Gibbs state at β_{eval}; for $\mathrm{H} = \kappa_{\mathrm{sup}} H \sigma_z$ it fixes it.*

• *Replacement by I/d is a thermal operation iff* H *is scalar; error $1 - 1/d^2$. The identity is thermal for every* H*; error 0 (cf. nuADaM01-A thm:negid(a)* (source record; not a premise)*).*

Proof. (a) The swap commutes with $\mathrm{H} \otimes I + I \otimes \mathrm{H}$ and $\mathrm{Tr}_B[\mathrm{SWAP}(X \otimes \gamma)\mathrm{SWAP}] = \mathrm{Tr}(X)\gamma$. (b),(c) Checks Big03-11 and Big03-12; the thermality criteria are as in the source record, whose proof is not re-run here except for the sample Hamiltonians.

par *Non-claim.* The error values are those already proved; the numerical argument is fixed by the supply and the Hamiltonian is a separately declared sample. The thermality *criteria* in (b) and (c) are conditional on Red06-G-DSS-CERT prop:RC-deph10; only the sample instances are checked here. O6 stays open. Ledger

unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (A temperature and a Hamiltonian still leave exact half-unit minimax error). *Fix $d \geq 2$, a declared Hamiltonian* H *and any finite $\beta > 0$, including β_{eval}. If the actual thermal operation is unspecified, predicting $\varepsilon(T)$ from* (H, β) *alone has exact minimax error*

$$\inf_{y \in \mathbb{R}} \sup_{T \text{ thermal}} |y - \varepsilon(T)| = \frac{1}{2}.$$

Proof. The identity is thermal with error 0. Take orthonormal eigenvectors e_1, e_2 of H and $U_\pi = I - 2|e_1\rangle\langle e_1|$; it commutes with H, so its channel $\mathscr{U}_\pi$ is thermal with a trivial bath. It sends $\psi_+ = (e_1 + e_2)/\sqrt{2}$ to the orthogonal $\psi_- = (-e_1 + e_2)/\sqrt{2}$; the input $|\psi_+\rangle\langle\psi_+|$ with effect $|\psi_+\rangle\langle\psi_+|$ has primal value 1 for $\mathrm{id} - \mathscr{U}_\pi$, and the complementary effect gives 1 for the opposite sign. For every channel the universal pair $Z_- = W_d$, $Z_+ = J(T)$ is feasible ($W_d - C_T = J(T) \geq 0$) with partial traces I, so every error is at most 1, with equality for $\mathscr{U}_\pi$; swap conjugation gives the other order. Errors 0 and 1 force $\max\{|y|, |y-1|\} \geq \frac{1}{2}$, and $y = \frac{1}{2}$ has error at most $\frac{1}{2}$ because $0 \leq \varepsilon(T) \leq 1$.

par *Non-claim.* This settles only the displayed non-identifiability problem over declared finite thermal operations; it constructs no physical horizon noise model, no detector and no radiation state. It quantifies the distinction between a temperature argument and a channel specification; O6 stays open in its physical scope. From the user draft t295u, verified; check Big03-25 ($d = 2, 3$, exact). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (The reservoir heat at a declared β). *In the spectator model of I-C-Th-CERT def:th-admitted* (source record; not a premise), *the designated-reservoir heat $Q_L(\beta) = \varepsilon/(1 + e^{-\beta\varepsilon})$ is strictly increasing in β with range $(\varepsilon/2, \varepsilon)$ and contains no κ. If, by a further declaration, $\beta = \beta_{\mathrm{eval}}$ and $\varepsilon = \kappa_{\mathrm{sup}} H$, then $Q_L = \varepsilon\, e^{2\pi}/(1 + e^{2\pi}) \approx 0.998136\,\varepsilon$. The energy worst-case error of a constant rule r over $\beta > 0$ is $\max\{r - \varepsilon/2, \varepsilon - r\} \geq \varepsilon/4$ (finite), with equality at $r = 3\varepsilon/4$.*

Proof. $\partial_\beta Q_L = \varepsilon^2 e^{-\beta\varepsilon}/(1 + e^{-\beta\varepsilon})^2 > 0$; limits; substitution; check Big03-13.

par *Non-claim.* The instantiation evaluates an already-proved formula at a number. Setting $\beta = \beta_{\mathrm{eval}}$ is a second declaration, not a consequence of κ_{sup}: the reservoir coefficient β of thm:th-cert stays an unfilled slot (Remark). Q_L is a heat, not a channel error (PC-6). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

The dynamics half: vacuity at the supplied value; analytic admission not supplied

Proposition (Dynamics vacuity with coefficient types separated). *Let g be a prescribed C^2 Lorentzian metric, $\Lambda \in \mathbb{R}$, and $\chi \neq 0$ a source-coupling constant (the coupling written κ in the source sheets, PC-3).*

• $\mathrm{T}_{\Lambda,\chi}[g] := \chi^{-1}(G[g] + \Lambda g)$ *is symmetric, weakly conserved ($\int \mathrm{T}^{ab} \nabla_a X_b \,\mathrm{dvol}_g = 0$ for every compactly supported C^1 vector field X), pointwise conserved if $g \in C^3$, and satisfies $G[g] + \Lambda g = \chi\, \mathrm{T}_{\Lambda,\chi}[g]$. This holds for every nonzero numerical χ and for every separately declared nonzero assignment $\chi = f(\kappa_{\mathrm{sup}})$. The $\hbar$-slot κ does not occur in $G + \Lambda g$; the supply selects no metric, no matter model and no value of Λ unless a matter law is supplied independently.*

• *On flat FLRW metrics $g = -c^2 \mathrm{d}t^2 + a(t)^2 \mathrm{d}\mathbf{x}^2$ with arbitrary C^3 scale factor a, $\nabla_a \Theta^a{}_b = 0$ identically for $\Theta = G + \Lambda g$; on the segment $a = e^{Kt}$ with $\Lambda = 3H_1^2/c^2$, $\Theta_{tt} = 3(K^2 - H_1^2)$. Futures with different K carry different Θ while agreeing on any prefix where they coincide, and the two-point minimax error of a rule of prefix data for Θ_{tt}*

is $\frac{3}{2}|K_1^2 - K_2^2|$, *independent of* κ_{sup}.

Proof. (a) For C^3 metrics the contracted Bianchi identity $\nabla^a G_{ab} = 0$ and $\nabla g = 0$ give $\nabla^a (G + \Lambda g)_{ab} = 0$ pointwise; integrate against X. For $g \in C^2$, work in a chart and take, by mollification of the components, smooth Lorentzian metrics $g_n \to g$ in C^2 on a neighbourhood of $\operatorname{supp} X$ (a finite partition of unity on X reduces to chart-supported fields; for large n the g_n stay Lorentzian there). Then $G[g_n] \to G[g]$, $\mathrm{dvol}_{g_n} \to \mathrm{dvol}_g$ and $\Gamma[g_n] \to \Gamma[g]$ locally uniformly, so $\int (G + \Lambda g)^{ab} \nabla_a X_b \, \mathrm{dvol}$, which is 0 for each g_n, is 0 in the limit. Dividing by $\chi \neq 0$ preserves it, and substitution proves the equation. No term involves κ. (b) Exact symbolic computation of the Christoffel symbols, Ricci tensor and divergence for arbitrary $a(t)$, check Big03-15; $\Theta_{tt} = 3\dot{a}^2/a^2 - \Lambda c^2$; Lemma (b).

par *Non-claim.* A restatement of Big01-A prop:Dyncert and of Hawk07-E-CERT prop:s2-vac(a), VC-OB-1-CERT prop:s2-vac(a) at the supplied value, with the C^2 weak form now argued locally (from the user draft t295u, completed by the chart and partition-of-unity step) and the FLRW class checked symbolically. The action-valued κ_{sup} is not identified with the gravitational coupling χ, whose units differ; any relation between them must itself be declared with its units. The proposition does not call a parent's independently supplied matter-action equations vacuous. No Einstein dynamics, no derived metric and no value of Λ is claimed. U6-sel is not moved. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (A nonzero scalar supply cannot replace a missing distributional construction). *Let* $O \subset W$ *be open,* $t^\circ \in \mathscr{D}'(O)$ *and* $a \neq 0$ *a fixed scalar.*

- t° *extends to* $\mathscr{D}'(W)$ *iff* at° *does.*
- *For specified linear maps* $\mathrm{Rec}: \mathscr{P} \to \mathscr{K}$ *and* $\widetilde{M}: \mathscr{P} \to \mathscr{D}'(W)$, $\ker \mathrm{Rec} \subseteq \ker \widetilde{M}$ *iff* $\ker \mathrm{Rec} \subseteq \ker (a\widetilde{M})$.
- *For every distribution* t, $\mathrm{WF}(at) = \mathrm{WF}(t)$.

Proof. (a) Multiply an extension by a, or by a^{-1}. (b) $\ker (a\widetilde{M}) = \ker \widetilde{M}$. (c) For a cutoff φ, $\widehat{\varphi at} = a\,\widehat{\varphi t}$, so rapid decay in a conic neighbourhood holds for one iff for the other.

par *Non-claim.* Scalar multiplication of specified objects only; it is not a universal obstruction to the full joint-map class. A supplied number does not specify an absent cross-line product, extension, section, contact choice or output theorem. No full characteristic map and no admitted $Q_H R_1^{(1)} \in \mathscr{E}_H$ is constructed: XIV-H reports its first missing gate at H2, XIV-I records that membership as not established and stops at its first missing gate I3, XIV-J stops at J2, and the kernel $H = \ker \mathrm{Rec}$ is the XV-B release object (source records, read in hashed copies; check Big03-31). The I3/J2 and downstream analytic obligations remain unfulfilled; XV-B is not opened. From the user draft t295u, verified. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Other slots and radiation calibrations

Proposition (Shared and independent coefficient slots). *Let* ζ *denote independent early data, possibly including an energy scale, and suppose a separately declared radiation-label model has*

$$T_{\mathrm{rad}}(t; \kappa, \zeta) = \frac{\theta(t, \zeta)}{k_B} \kappa^{3/4}, \qquad S_{\mathrm{rad}}(t; \kappa, \zeta) = \sigma(t, \zeta) \kappa^{-3/4},$$

with positive prefactors. This is the form of nuADaM01-A thm:coefrad (source record; not a premise), *where the slot is the same* κ *as in (PC-2).*

- *At fixed prefactors* $\partial_\kappa \ln T_{\mathrm{rad}} = 3/(4\kappa)$ *and* $\kappa = (k_B T_{\mathrm{rad}}/\theta(t, \zeta))^{4/3}$*: a known absolute radiation label is coefficient-equivalent only after its prefactor is fixed.*

• *At two times with the same* κ *and* ζ, $T_{\mathrm{rad}}(t_1)/T_{\mathrm{rad}}(t_2) = \theta(t_1,\zeta)/\theta(t_2,\zeta)$, *and also* $S_{\mathrm{rad}}(t_1)/S_{\mathrm{rad}}(t_2) = \sigma(t_1,\zeta)/\sigma(t_2,\zeta)$; *any collection of such ratios is coefficient-blind.*

• *For a separately supplied late rate* $K > 0$ *and* $S_{\mathrm{GH}}(\kappa,K) = \pi k_B c^5/(\kappa G K^2)$,

$$S_{\mathrm{GH}}(\kappa,K) = \frac{\pi k_B c^5}{GK^2}\left(\frac{\theta(t,\zeta)}{k_B T_{\mathrm{rad}}(t;\kappa,\zeta)}\right)^{4/3};$$

both the calibrated early prefactor and the late rate are used.

• *At fixed* ζ, K, $S_{\mathrm{rad}}/S_{\mathrm{GH}} = \frac{\sigma(t,\zeta)GK^2}{\pi k_B c^5}\kappa^{1/4}$; *there is no coefficient-independent proportionality valid at two coefficient values.*

Proof. Differentiate, divide and invert ; for (c) substitute the inverse for $1/\kappa$; for (d) the coefficient of $\kappa^{1/4}$ is fixed and positive and $\kappa^{1/4}$ is strictly increasing. Checks Big03-22 and Big03-14.

par *Non-claim.* Where the radiation model uses the same κ, as nuADaM01-A does, supplying κ_{sup} fills that shared coordinate (consistent with PC-2); it does not fill ζ or an energy-scale coordinate within it. If a different radiation coefficient ρ is independently declared, its equality to κ_{sup} requires a separate bridge and is not inferred from notation. Equation is a calibrated evaluation, not a host derivation; it restates nuADaM01-A thm:negid(b),(c) (source record; not a premise). From the user draft t295u, verified. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Lemma (A precise two-label calibration test). *Suppose on* $U > 0$, $\kappa > 0$ *that* $T = a(U)\kappa^{\alpha}$ *and* $S = b(U)\kappa^{-\alpha}$ *with* $a, b > 0$ *and* $\alpha \neq 0$. *If* $U \mapsto a(U)b(U)$ *is injective, the pair* (T,S) *determines* (U,κ), *and at differentiable points*

$$\det \frac{\partial(\ln T, \ln S)}{\partial(\ln U, \ln \kappa)} = -\alpha \frac{\mathrm{dln}\,(ab)}{\mathrm{dln}\,U}.$$

A temperature alone need not determine either coordinate: $T = A_0 U^{w/(1+w)}\kappa^{3w/(1+w)}$, $w > 0$, *is constant along* $U\kappa^3 = \mathrm{const}$.

Proof. $TS = a(U)b(U)$ determines U, and then $\kappa = (T/a(U))^{1/\alpha}$. The determinant follows by differentiating the two logarithms; the example by collecting powers. Check Big03-23 (symbolic, for arbitrary a, b).

par *Non-claim.* A criterion for displayed calibration maps, not a replacement for any Big02-A model formula; injectivity in κ fails when the exponent is zero. With $\alpha = 3w/(1+w)$ and $\mathrm{dln}\,(ab)/\mathrm{dln}\,U = 1$ it reproduces the Jacobian $-3w/(1+w)$ of Big02-A thm:v4-wlabels (source record; not a premise). The draft attributed the general-w comparison to thm:v3-labels; that label is the $w = \frac{1}{3}$ case only (draft correction DC-3, PC-1). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Coefficient injectivity in the slots that the supply does not fill). *Fix* $\kappa = \kappa_{\mathrm{sup}}$.

• *Energy scale* ε_s *(Big02-A def:v4-labels* (source record; not a premise)*).* $\partial \ln T_w/\partial \ln \varepsilon_s = (1-3w)/(1+w)$. *So for* $w \neq \frac{1}{3}$ *the label* T_w *is injective in* ε_s *at fixed* κ_{sup}, *and every rule of the remaining data has infinite worst-case error on it; for* $w = \frac{1}{3}$ *the slot drops out.*

• *Energy constant* U. $\partial \ln T_w/\partial \ln U = w/(1+w) > 0$, *so* T_w *is injective in* U *at fixed* κ_{sup}. *The Jacobian of* $(\ln T_w, \ln S_w)$ *with respect to* $(\ln U, \ln \kappa)$ *is* $-3w/(1+w) \neq 0$ *(*$-\frac{3}{4}$ *at* $w = \frac{1}{3}$*), and* T_w *is invariant under* $(U,\kappa) \mapsto (r^{-3}U, r\kappa)$. *Hence, with* U *unsupplied, one early label is not a calibration of* κ; *once* $\kappa = \kappa_{\mathrm{sup}}$ *is supplied, the rescaling is frozen, and a supplied value of* T_w *would determine* U *(it is not supplied here).*

• *Reservoir* β. $Q_L(\beta)$ *is injective in* β *and contains no* κ *(Proposition); the fibre over* κ_{sup} *is the whole* β*-family.*

• *nuADaM01-A radiation labels share the slot.* $T_{\mathrm{rad}}^{(\kappa)}(t) = \kappa^{3/4}\theta(t)/k_B$ *with* $\theta(t) = (45c^5h(t)^2/(4\pi^3 G g_*))^{1/4}$, *so* $\partial_\kappa \ln T_{\mathrm{rad}} = 3/(4\kappa)$ *and* $T_{\mathrm{rad}}^{(\kappa_{\mathrm{sup}})}(t)$ *is an evaluation in the declared* g_* *and the prescribed* $h(t)$*; ratios* $T_{\mathrm{rad}}(t)/T_{\mathrm{rad}}(t') = (h(t)/h(t'))^{1/2}$ *are* κ*-free.*

Proof. Logarithmic differentiation of $T_w = k_B^{-1}(u\kappa^3 c^3 \varepsilon_s^{n_w - 4}/\alpha)^{1/n_w}$, $n_w = (1 + w)/w$, $u = Ua^{-3(1+w)}$, and of $S_w = (1 + w)uV/T_w$; determinant $-\frac{3w^2 + 3w}{(1+w)^2}$. Check Big03-14.

par *Non-claim.* Local derivative and Jacobian facts on the declared label dictionaries; they derive no equation of state, no thermal state and no particle content, and fill no slot. Part (d) records that, on nuADaM01-A's own definitions, the supply *evaluates* the radiation labels; this is a plan correction (PC-2), not a derivation of the early labels from the host. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (The energy scale, the reservoir coefficient and slots not filled). Supplying κ_{sup} fills exactly one slot, the $\hbar$-slot, together with every model coordinate that is explicitly the same slot (the nuADaM01-A radiation labels, PC-2). It does not fill: the energy-scale slot ε_s of Big02-A def:v4-labels and thm:v4-wlabels (for $w \neq \frac{1}{3}$); the energy constant U of thm:v3-labels and thm:v4-wlabels, the independent early radiation coefficient on Big02-A; an independently declared radiation coefficient; or the reservoir inverse temperature β_{res} of I-C-Th-CERT thm:th-cert. On Big02-A the early labels become numerical only if U (and ε_s, $w \neq \frac{1}{3}$) is supplied as well. The number $\beta_{\mathrm{eval}} = 2\pi/(\kappa_{\mathrm{sup}} H)$ is an evaluation argument, not an assertion that an actual reservoir has $\beta_{\mathrm{res}} = \beta_{\mathrm{eval}}$; for a separately supplied gap ε, the thermal-bill witness evaluates to $Q_{\mathrm{eval}} = \varepsilon/(1 + \exp[-2\pi\varepsilon/(\kappa_{\mathrm{sup}} H)])$, and $\partial_\beta\, \varepsilon/(1 + e^{-\beta\varepsilon}) > 0$ is injectivity in β, not a derivation of an action coefficient.

par *Non-claim.* The plan's sentence that the radiation coefficient of nuADaM01-A thm:coefrad is an independent slot is not supported by that sheet and is corrected (PC-2); the independent early slot is U on Big02-A. The thermal bill depends on a specified implementation; the identity implementation has zero bill at every β. No unsupplied reservoir, gap, energy scale or independent radiation parameter is assigned a value, and no early label is derived from the host. Merged with the user draft t295u's rem:R-slots, which did not list U (DC-8). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Status

Remark (O1, O2, O6). *O2* (a derivation of T_{GH} or S_{GH} from an Enter instrument) remains closed negatively for the unsupplied class (Theorem). The supplied form is the substitution of Proposition , a trivial evaluation, not a new positive theorem about the host and not a derivation from an Enter instrument. *O1* stays open: dim leN$_{\mathrm{sup}}$ requires a separately supplied promise P$_\eta$ (Proposition). *O6* stays open: a thermal channel may be evaluated at the number T_{sup} (Propositions ,), but the channel, the Hamiltonian and the bath must still be supplied, and T_{sup} alone fixes no channel (Big01-A prop:nothermal (source record; not a premise)); Theorem quantifies one finite-model ambiguity as exact minimax error $\frac{1}{2}$. Other slots stay unfilled unless independently supplied or explicitly identified by a declared bridge, and shared coordinates are not counted twice (Remark). XV-B is not opened; XVI-N and N-Ins.4 are not discharged; Gate 0 and ST4b stay NOT_SUPPLIED; Host C is not created. Dynamics vacuity is unchanged (Proposition); U6-sel is not moved. O.1 stays NOT_CLOSED{} for its own reasons.

par *Non-claim.* A status record, not a closure. The supply/evaluation package is complete on its displayed definitions; the open physical, geometric and analytic residuals are not declared closed. No detector, Bunch–Davies state, type-II_1 algebra, Page curve, island, evaporation dynamics, particle species, clustering mechanism or external-clock-free quantum evolution is constructed. Merged with the user draft t295u's

rem:R-O1O6. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Consequences, corrected (plan S 5)

toprule Item Current After the supply Where

midrule endhead Coefficient certificate (thm:Hcert) negative for admitted data negative for $\mathscr{K}_{\mathrm{un}}$; evaluated at κ_{sup} for $\mathscr{K}_{\mathrm{sup}}$; not ``closed'' Thm , Prop

O2 closed negatively; supplied form refused closed negatively for $\mathscr{K}_{\mathrm{un}}$; supplied form is the substitution, not a derivation Rem

O1 open open; needs P_{η} Prop

O6 open open; T_{sup} fixes no channel; minimax $\frac{1}{2}$ over thermal operations Prop , Thm

Dynamics (prop:Dyncert, prop:s2-vac) negative unchanged Prop

Early radiation labels external Big02-A: numerical only if U (and ε_s, $w \neq \frac{1}{3}$) also supplied; nuADaM01-A: evaluated (shared slot, PC-2) Prop , Rem

Channel floors κ-derivative zero unchanged Prop

En08 finite-interval error exact formula unchanged for $\mathscr{K}_{\mathrm{un}}$; re-proved, extended to S, N and randomized rules; relative risks Thm (d), Prop

Analytic admission (XIV-H/I/J, XV-B) stops H2, I3, J2 unchanged; a scalar replaces no construction Prop

O.1, XV-B, XVI-N, Host C, Gate 0, ST4b unchanged unchanged Rem

bottomrule

Admissible statements (plan S 6), each with its non-claim

• Numerical evaluation of $T_{\mathrm{sup}}, S_{\mathrm{sup}}, N_{\mathrm{sup}}$ at κ_{sup} and a declared Hubble rate: Proposition (c). *Non-claim:* the formula at a supplied number; not a detector, not a Bunch–Davies state, not a derivation from the host.

• Thermal-operation errors at β_{eval}: Propositions , and . *Non-claim:* the error values are those already proved; the temperature is fixed by the supply; the channel is not Hawking radiation; O6 stays open.

• Under P_{η}, $q \leq \lfloor \mathrm{etaS}_{\mathrm{sup}}/(k_B \ln 2) \rfloor$: Proposition . *Non-claim:* conditional on the promise; O1 stays open; no finite Hilbert space is derived.

• κ-free ratios of radiation labels at two times (nuADaM01-A thm:coefrad(d)) and the product $T_{\mathrm{sup}} S_{\mathrm{sup}} = c^5/(2GH)$: Propositions (b), (d) and (b). *Non-claim:* they do not determine κ and fill no slot.

• Re-proof of the En08 finite-interval error for $\mathscr{K}_{\mathrm{un}}$: Theorem (d). *Non-claim:* it sharpens the negative certificate and supplies no coefficient.

Separations

Remark (Separations; every item a source record, not a premise).

• Big01-A thm:Hcert, thm:fibre, prop:Dyncert: the unsupplied half restates them and re-proves what it uses; the supplied half is the evaluation they call required and refused in the admitted class. Proofs are not imported.

• Big02-A thm:coef: the floors have κ-derivative zero; the supply leaves them unchanged; that invariance is not a derivation of κ.

• Big02-A thm:v3-labels ($w = \frac{1}{3}$) and thm:v4-wlabels (general w, slot ε_s): the Jacobian fact is a separation; with U unsupplied one early label is not a calibration (PC-1, PC-7).

• En08-ST-DSS-CERT thm:EC-coef: the finite-interval formula is re-proved (Theorem (d)); the proper certificates recover H, not $\hbar H/(2\pi k_B)$.

• DS-OB-1-CERT thm:DS-coef6: the same slot (written q) on a prescribed background, with a local form; a GH coefficient certificate is not this supply.

• nuADaM01-A thm:coefrad: $\partial_\kappa \ln T_{\mathrm{rad}} = 3/(4\kappa)$; ratios κ-free; the slot is shared (PC-2). thm:negid: the recovery formula needs the supplied late rate K and an early label; it is not a host derivation and gives no κ-free proportionality ($S_{\mathrm{rad}}/S_{\mathrm{GH}} = C\kappa^{1/4}$); $G + \Lambda g$ selects no matter model.

• I-C-Th-CERT thm:th-cert: injective in the reservoir β, not in $\hbar$; instantiating at β_{eval} evaluates a formula, identifies no noise model and does not close O6.

• Hawk07-E-CERT prop:s2-vac, VC-OB-1-CERT prop:s2-vac: vacuity for every coupling; the supply selects neither a metric nor Λ.

• Red06-G-DSS-CERT prop:RC-mod10: the remaining proper time is free of the late rate K (part (e); it contains no $\hbar$-slot either, but the source's statement is K-freeness, DC-4) and is not an extension obstruction (C^0/C^1 inextendibility stays open there); prop:RC-deph10: dephasing is thermal only in an eigenbasis of H_S. Neither is altered by the supply, and neither derives a temperature.

• V-DST-DSS-CERT prop:VDC-dN10: the dimension count and the prescribed-divergence affine space select no value of Λ (part (c) gives only the relation $\Lambda = 3aH^2$ among declared data); compatible with the supply, not a consequence of it.

• PG-OB-1-CERT thm:s2-exact: exact replacement error $1 - 1/\Im(\sigma)$; κ-independent; not a horizon temperature.

• I-C-CERT thm:optimum: shredder floor $1 - 1/d$; κ-independent; not a GH label.

• SG-OB-1 thm:SG-main: registered hosts decide neither a cosmological singularity nor a bounce; not affected. (No SG-OB-1-CERT record exists; site GET 404.)

• XV-B thm:release and XVI-N thm:massless-obstruction (a conditional massless obstruction for one constructed instance): not opened and not discharged; N-Ins.4 stays unresolved.

• XIV-H, XIV-I, XIV-J (read-only site GETs, hashed in Appendix): analytic source records whose first missing gates are H2, I3 and J2; XIV-I records $Q_H R_1^{(1)} \in \mathscr{E}_H$ as not established. A metrological scalar supply does not discharge their model-specific obligations (Proposition). H2, I3, J2 stay unresolved.

• *OpenAI records (documentary only; no family proof verified).* Oai276-A: a one-use Holevo optimum of a generalized amplitude-damping channel; a Holevo quantity is not a GH label and not a value of $\hbar$. Oai119-A: Hellinger contraction on the two-dimensional cube; not a coefficient slot. Oai272-A: secret-bit and PPT-composition certificates; not this supply. Oai290-A: typed boundary certification; its abstract lists ``no joint map, quantum coefficient, …{} is claimed"; not a source of κ_{sup}. Oai365-A: conditional boundary-to-interior identification under a calibrated Dirichlet-to-Neumann extraction on a specified coefficient class; that class is operational, not the $\hbar$-slot, and the $\hbar$ written in its laboratory Hamiltonians is a unit of its pilots (PC-8). Oai265-A: conditional audit of area-law records; not a dimension derivation for N_{GH} (its $\hbar$ in a preparation Hamiltonian is likewise a unit, PC-8). The OpenAI catalogue record states ``No quantum coefficient is admitted"; it is not a premise and does not authorize the supply.

par *Non-claim.* Separations mark objects that must not be identified; they are not bridges and transfer no proof. No parent theorem is revised, strengthened by attribution, or used as an unproved premise of a local proof. Every reference is to a full byte copy hashed equal to the site record, not to excerpts (DC-5). Merged with the user draft t295u's rem:R-sep. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Implementation record (plan S 10)

• *Freeze.* sha256 of Big01-A v5, Big02-A v6, En08-ST-DSS-CERT v10, DS-OB-1-CERT v5, nuADaM01-A v5 and I-C-Th-CERT v6 are recorded in Appendix , with the seven further parents; all equal the live site records. Done.

• *New sheet.* This sheet; no parent edited (check Big03-18). Done.

• *Documentary edge.* Documentary record ; not a premise. Done.

• *Local re-proofs.* Lemma , Theorem ; thermal theorems instantiated without new proofs (Proposition). Done.

• *Numerical checks at* κ_{sup}. Checks Big03-07–Big03-16 and Big03-19–Big03-30; floors unchanged; unfilled slots remain unfilled. Done.

• *User draft t295u.* Integrated item by item with verdicts (Appendix); check Big03-31. Done.

• *Status.* Remark . Done.

• *Closing non-claim.* Below. Done.

• *Registration.* Not requested; not done. If a later request registers the sheet, it is to be placed on the Page-curve and emergence homes as a source record only, with an obligation that it does not discharge the ledger; not on the vacuum or singularities homes; not edged as a proof transfer.

Closing non-claim. The admission on this sheet is a supply, not a derivation. The standing refusal line ``No quantum coefficient is admitted" in every other sheet is untouched, and no negative certificate is converted into a positive derivation.

Checks

The checks are the executed program checks_Big03A_v1.py; its JSON output checks_Big03A_v1.json is part of the delivery. Exact claims are decided in exact arithmetic (sympy rationals, surds and symbolic exp); numerical evaluations are labelled as such. toprule Check Content Result

midrule endhead Big03-01 Provenance: plan sha256; 13 parents equal the live site records; originals untouched; 9 documentary records hashed pass

Big03-02 32 cited labels exist; statement audit (interval formula verbatim, $3/(4\kappa)$, shared slot, $w = \frac{1}{3}$ vs general w, coupling in prop:s2-vac, Big01 supplied evaluation, finite $\varepsilon/4$, SG-OB-1-CERT absent, Big03-A absent on site, OpenAI lines) pass

Big03-03 Injectivity: derivatives and limits of $T, S, \ln N$ pass

Big03-04 Fibre criterion (exhaustive, 64 cases) and the max identity (rational grid) pass

Big03-05 Interval formula , minimax, prior witness, S analogue pass

Big03-06 Infinite worst-case error; inverse maps; $T \cdot S = c^5/(2GH)$ pass

Big03-07 Evaluation at κ_{sup}, samples H_0, H_Λ; agreement with Big01-A C-6; $\beta_{\mathrm{eval}}\kappa_{\mathrm{sup}}H = 2\pi$ pass

Big03-08 Units: S_{sup}/k_B invariant, T_{sup} a temperature, κ-free ratios pass

Big03-09 Floors: κ-derivative zero, unchanged at κ_{sup} pass

Big03-10 Gibbs replacement: duals both signs, both orders, primal both signs, symbolic in $x > 0$; value at $x = e^{-2\pi}$ pass

Big03-11 Dephasing, I/d replacement, identity at $d = 2, 3$: both signs, both orders, primal pass

Big03-12 Thermality samples at β_{eval}: σ_x vs σ_z dephasing; $I/2$ pass

Big03-13 Q_L: monotone, range, value at $\beta\varepsilon = 2\pi$, energy minimax $\varepsilon/4$, no κ pass

Big03-14 Slots: Jacobian $-3w/(1+w)$, ε_s exponent $(1-3w)/(1+w)$, U exponent, rescaling; nuADaM shared slot and ratios pass

Big03-15 FLRW: $\nabla_a \Theta^a{}_b = 0$ for arbitrary $a(t)$; $\Theta_{tt} = 3(K^2 - H_1^2)$ pass

Big03-16 Monoid invariance; conditional capacity bound pass

Big03-17 Manuscript audit: ledger verbatim (equal to Res06-A v2), supply line verbatim, required phrases, authorship, the eight plan labels, a non-claim after every result, no duplicate labels pass

Big03-18 Frozen XVI-P/Q/R trees equal the expected hashes; source copies unchanged pass

Big03-19 Unsupplied extensions: N-interval identity, N decreasing, randomized triangle bound, endpoint prior against randomized laws pass

Big03-20 Refinement criterion: the three inverses ; an invertible calibration not named κ pass

Big03-21 Relative risk: harmonic-mean equalizer, rational grid optimality, $r_{T} = r_{S} = \delta$, $r_{N} = \tanh(\cdot)$ pass

Big03-22 Radiation model: $3/(4\kappa)$, inversion, ratio cancellation, late recovery , $\kappa^{1/4}$ factor pass

Big03-23 Two-label lemma: Jacobian for arbitrary a, b; consistency with $-3w/(1+w)$; the $U\kappa^{3}$ example pass

Big03-24 Gibbs replacement, general form: $Z_{\pm} = (1-f)W$, $\gamma \otimes I - fW$ (qubit symbolic, qutrit exact), both signs, both orders, primal; $\Im = Z(\beta)Z(-\beta)$ pass

Big03-25 O6 minimax: U_{π} commutes, orthogonal output, primal 1 both signs, universal pair, value $\frac{1}{2}$ $(d = 2, 3)$ pass

Big03-26 Capacity d and q bounds; spectator-blind $H \to 2H$ counterexample; growth violates the bound pass

Big03-27 Draft listing (C-RS-08) *executed* verbatim, all assertions pass; independent 50-digit T_{*}, s_{*}, S_{*} inside the enclosures pass

Big03-28 Units: draft exponents, $T' = T/\lambda_{\Theta}$, $S'/k_{B}' = S/k_{B}$ (exact symbolic) pass

Big03-29 Dependent Gibbs family: cosh form of $\Im$, $\Im' > 0$ samples, derivative formula pass

Big03-30 Saved NIST CODATA 2022 pages parsed offline: $G = 6.67430(15) \times 10^{-11}$; h, c, k exact; $\hbar$ exact, non-terminating pass

Big03-31 Draft sha256 and length; every draft-cited label exists in a hashed copy; XIV-H/I/J present with H2, I3, J2 and $Q_{H}R_{1}^{(1)} \in \mathscr{E}_{H}$ not established; XV-B $H = \ker \mathrm{Rec}$ pass

bottomrule

Crosswalk from the draft's check identifiers. The user draft t295u numbered its checks C-RS-01–C-RS-08 and presented them as *not executed*. They are absorbed into the Big03 series as follows; all listed Big03 checks were executed for this build. toprule Draft Big03 checks

midrule C-RS-01 (derivatives, inverses) Big03-03, Big03-06, Big03-20

C-RS-02 (endpoint absolute risk, En08) Big03-05, Big03-19

C-RS-03 (relative risk) Big03-21

C-RS-04 (radiation inversion, ratios, $\kappa^{1/4}$) Big03-14, Big03-22, Big03-23

C-RS-05 (replacement duals, primal) Big03-10, Big03-24

C-RS-06 (O6 endpoints, minimax $\frac{1}{2}$) Big03-25

C-RS-07 (capacity, monoid) Big03-16, Big03-26

C-RS-08 (Machin, enclosures) Big03-27

bottomrule

Part II. Version 2 additions (request t297u) Everything in Part II is new in version 2. Citations identify source records only; no proof transfer. Each cited label was read in a read-only copy byte-identical to the site record (Appendix ; checks Big03-32, Big03-33, Big03-44, Big03-59). Part II integrates three inputs: the plan t297u, the user draft t298u (``Big03-A: New Findings for a Proposed Insertion", adopted as the version-2 insertion block; every item re-proved or checked locally, verdicts in Appendix) and the plan t299u. Where two inputs state the same item, one statement is kept in its stronger verified form under the earlier label; the other input's label is mapped in Appendix .

Further separations: same slot, coupling slots, selector coefficients, vacuum term

Remark (Red06's injectivity certificate is the same slot). Red06-G-DSS-CERT thm:RC-coef states, with

varkappa in the slot of $\hbar$, the injectivity of $T^{(\mathrm{varkappa})} = \mathrm{varkappa}\, H/(2\pi k_B)$ and $S^{(\mathrm{varkappa})} = \pi k_B c^5/(\mathrm{varkappa}\, GH^2)$, infinite worst-case error, and the finite-interval formula. These are the formulas in the same slot, already re-proved in Theorem (a)–(d), and they are not re-proved again. Its part (c), the *entropy-rescaling identity* $T^{(\mathrm{varkappa})}\,\mathrm{d}S^{(\mathrm{varkappa})}/\mathrm{d}H = \mathrm{d}X/\mathrm{d}H$ with $X = c^5/(GH)$, holds for every varkappa > 0; it is checked here exactly (both sides equal $-c^5/(GH^2)$); check Big03-34) and is, like $T_{\mathrm{sup}} S_{\mathrm{sup}} = c^5/(2GH)$, a κ-blind identity that cannot single out varkappa = $\hbar$. Its part (d) says that a rule reproducing $T^{(\mathrm{varkappa})}$ for every varkappa takes the coefficient as input, which is Theorem (e). (Red06 writes varkappa for this slot; the letter differs from its surface-gravity notation, not the slot.)

par *Non-claim.* A second injectivity certificate for the same slot is not this supply, and the supply does not alter it. The identity of part (c) is not a calibration of κ. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Coefficient injectivity in the coupling and selector slots, with nonzero witnesses). *For reals* $\ell \le u$ *write* $\rho(y;\ell,u) = \frac{u-\ell}{2} + |y - \frac{u+\ell}{2}|$. *Keep* κ_{sup} *fixed and impose no bridge between it and any coordinate below.*

• *The coupling* χ. *Fix a metric* g, Λ, *a point and a component with* $\theta := \Theta_{ab} \neq 0$, $\Theta = G[g] + \Lambda g$. *Then* $\chi \mapsto T^{(\chi)}_{ab} = \theta/\chi$ *is injective on* $(0,\infty)$ *with range* $\mathrm{sgn}(\theta)(0,\infty)$*; every rule of the remaining data has infinite worst-case error, and on* $[\chi_1,\chi_2]$ *the rule with value* y *has worst-case error exactly* $\rho(y;\theta/\chi_2,\theta/\chi_1)$ *for* $\theta > 0$ *(endpoints exchanged for* $\theta < 0$*).*

• *The named coupling* $\mathrm{varkappa}_0$ *of V-DST. The same holds for a source component* $s^{(\mathrm{varkappa}_0)} = a/\mathrm{varkappa}_0$ *of* $T_X(h) = \mathrm{varkappa}_0\, s$ *with a fixed component* $a \neq 0$ *of* $T_X(h)$ *(derivative* $-a/\mathrm{varkappa}_0^2$*; constant-rule minimax on* $[\mathrm{varkappa}_0^-, \mathrm{varkappa}_0^+]$ *exactly* $\frac{|a|}{2}(\frac{1}{\mathrm{varkappa}_0^-} - \frac{1}{\mathrm{varkappa}_0^+})$*; unbounded as* $\mathrm{varkappa}_0 \,\mathrm{downarrow}\, 0$*) and, with the sign of the component, for the linear labels* $\mathrm{varkappa}_0\, b$, $b \neq 0$ *(minimax* $|b|(\mathrm{varkappa}_0^+ - \mathrm{varkappa}_0^-)/2$*), e.g.* $T^{(\mathrm{varkappa}_0)}_{\sigma} = \mathrm{varkappa}_0\, G[g_\sigma]$. *If a stress is written* $\mathrm{varkappa}_0\, G$ *and the field equation is written* $G = \chi \cdot (\mathrm{stress})$*, then* $\mathrm{varkappa}_0 \chi = 1$*; the Einstein normalization* $\mathrm{varkappa}_0 = 1/(8\pi G_N)$ *is the inverse of the Einstein value of* χ *(in units* $c = 1$*).*

• *Selector coefficients* α_i. *Let* $P_\alpha = P_* + \sum_j \alpha_j B_j$ *with linearly independent* B_j, *all coordinates but* α_i *fixed. Then* $\alpha_i \mapsto P_\alpha$ *is injective. If* $\ell(P_\alpha h) = a + b\alpha_i$ *with* $b \neq 0$, *the rule with value* y *has worst-case error exactly* $\frac{|b|(v-u)}{2} + |y - a - \frac{b(u+v)}{2}|$ *on* $\alpha_i \in [u,v]$, *and infinite worst-case error on* $\mathbb{R}$ *or* $(0,\infty)$*; for the coordinate itself* $b = 1$.

• *The* $\hbar$*-slot* κ *occurs in none of these maps; each statement holds at* $\kappa = \kappa_{\mathrm{sup}}$ *exactly as on* $\mathscr{K}_{\mathrm{un}}$. *Adjoining the fixed* κ_{sup} *to data that contain none of* $\chi, \mathrm{varkappa}_0, \alpha$ *leaves each family inside one data fibre, so no displayed error is removed.*

• *Zero witness. A component with* $\theta = 0$, $a = 0$ *or* $b = 0$ *is constant in its slot; it is not injective and supplies no certificate.*

Proof. Each map is continuous and strictly monotone (reciprocal or affine) in its slot, so on an interval its range is the segment between the endpoint values, and Lemma (c) gives ρ; unbounded ranges give infinite error by Lemma (d). In (c), $P_\alpha - P_{\alpha'} = (\alpha_i - \alpha_i')B_i$ and $B_i \neq 0$ give injectivity; the endpoint values are $a + bu$ and $a + bv$, whose half-spread is $|b|(v-u)/2$ and midpoint $a + b(u+v)/2$. In (b), the endpoint values of $a/\mathrm{varkappa}_0$ are $a/\mathrm{varkappa}_0^{\pm}$, and substituting the stress into the field equation gives $G = \chi\mathrm{varkappa}_0\, G$ for every $G \neq 0$. (d) The added datum is the same on every member of each family. (e) Inspection. Checks Big03-35 (rational grids for both signs of b, two intervals, five decisions; limits) and Big03-45 (the draft's tests: $a = 6$, $\mathrm{varkappa}_0 \in [1,3]$ gives endpoint values $6, 2$, midpoint 4, error 2; $a_i = 1$, $b_i = 3$, $\alpha_i \in [-2,4]$ gives $-5, 13$, midpoint 4, error 9; operator injectivity on a linearly independent triple; the zero-witness case is constant).

par *Non-claim.* Injectivity is a property of a specified target with a nonzero witness; operator-level injectivity does not mean that every chosen field, point or component detects the operator. The form of V-DST-DSS-CERT prop:VDC-coef and V-DST-DSS-CERT prop:VDC-coefid9 is re-proved here for the displayed maps only. Merged with the user draft's prop:R-adjacent-injectivity, whose χ is written varkappa$_0$ here (DC-14). The ledger supplies no value of χ, varkappa$_0$ or α; no field equation, stress or selector is derived, and U6-sel is not moved. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (The coupling and selector slots are not the $\hbar$-slot). V-DST-DSS-CERT prop:VDC-coef names the coupling varkappa$_0$ of the source equation $T_X(h)$ = varkappa$_0$ s; the ledger supplies no value, and the Einstein normalization varkappa$_0$ = $1/(8\pi G_N)$ is one data-compatible value among all. It is a coupling slot. In the Einstein normalization it is the *inverse* of the coupling written χ on this sheet (Proposition (b); plan correction PC-12), and it is not the $\hbar$-slot. V-DST-DSS-CERT prop:VDC-coefid9 concerns the basis coefficients α_i of linearly independent equivariant operators of order ≥ 4; these are selector coefficients, not $\hbar$. Supplying κ_{sup} fills neither χ (or varkappa$_0$) nor any α_i. Declaring either to be a function of κ_{sup} would be a second supply, and it would still be a supply. Coefficients multiplying $G[g]$, dividing $T_X(h)$, or appearing in $G + \Lambda g = \chi T$ are compared only through an explicit normalization convention, not through a shared symbol; a normalization involving a Newton constant is a further declared relation, not selected by κ_{sup}.

par *Non-claim.* No value of χ, varkappa$_0$ or α_i and no normalization bridge is supplied. U6-sel is not moved. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (Slot sensitivities are nondegeneracy statements, not universal injectivity). For the slots of version 1 the displayed sensitivities are (Proposition , Proposition): $\partial_{\ln U} \ln T_w = \frac{w}{1+w}$ ($w > 0$); $\partial_{\ln \varepsilon_s} \ln T_w = \frac{1-3w}{1+w}$, which is *zero* at $w = \frac{1}{3}$; $\partial_\beta Q_L = \frac{\varepsilon^2 e^{-\beta\varepsilon}}{(1+e^{-\beta\varepsilon})^2}$ ($\varepsilon > 0$, on the specified witness implementation; the identity implementation has $Q_L \equiv 0$). The plan's phrase ``coefficient injectivity in every unfilled slot'' (t297u) is to be read as nondegeneracy where a nonzero sensitivity is exhibited; a zero sensitivity stays zero and is not promoted to injectivity. Check Big03-45.

par *Non-claim.* These are the existing slot sensitivities, not new supplies; U, ε_s and β_{res} stay unfilled. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (The supply does not select the vacuum term). *Let* $\mathscr{F} = \{T + c_0 g + c_G G + c_1 E^{(1)} + c_2 E^{(2)} : (c_0, c_G, c_1, c_2) \in \mathbb{R}^4\}$ *as in DS-OB-1-CERT thm:v5-vac (identical text in VC-OB-1-CERT thm:v5-vac), with* $E^{(1)}, E^{(2)}$ *as defined there.*

• *CONDITIONAL on that record: for every* C^5 *metric every member is symmetric and divergence-free, and on every open set with* Ric = $\frac{R}{4} g$ *every member is* $T + (c_0 - \frac{R}{4} c_G) g$.

• *Local exact re-check on the flat de Sitter patch* $g = -\mathrm{d}t^2 + e^{2Ht}\mathrm{d}\mathbf{x}^2$ *(units* $c = 1$*, the source's curvature convention):* Ric = $\frac{R}{4} g$ *with* $R = 12H^2$, $\nabla \mathrm{Ric} = 0$, $G = -3H^2 g$, *and* $E^{(1)} = E^{(2)} = 0$*; hence every member equals* $T + (c_0 - 3H^2 c_G) g$.

• *The map* $(c_0, c_G, c_1, c_2) \mapsto \lambda = c_0 - 3H^2 c_G$ *is onto* $\mathbb{R}$ *while all members share the metric, so every rule assigning* λ *from the geometry of the patch has infinite worst-case error over* $\mathscr{F}$.

• κ *does not occur in* $\mathscr{F}$. *Supplying* κ_{sup} *selects no* c_0 *and no* λ.

• *Rank one. On a component of an Einstein region with scalar curvature R, the coefficient map is the row* $L_R = (1, -\frac{R}{4}, 0, 0)$, $L_R(c) = c_0 - \frac{R}{4}c_G$, *of rank one, with* $\ker L_R = \mathrm{span}\{(\frac{R}{4}, 1, 0, 0), (0, 0, 1, 0), (0, 0, 0, 1)\}$. *With the metric and* κ_{sup} *fixed, neither* λ *nor* c_0 *is determined, and both have infinite worst-case error over* $\mathbb{R}^4$.

• *A supplied restricted tensor. If* $X - T$ *is separately supplied on the region, it determines* λ *only. For* $R \neq 0$, $(c_0, c_G) \mapsto (c_0 + \frac{R}{4}t, c_G + t)$ *preserves it, so* c_0 *and* c_G *stay inseparable; for* $R = 0$ *it determines* $c_0 = \lambda$, *while* c_G, c_1, c_2 *stay invisible there.*

Proof. (b) Exact symbolic computation of the Christoffel symbols, the Riemann tensor in the convention $R^a{}_{bcd} = \partial_c \Gamma^a_{bd} - \partial_d \Gamma^a_{bc} + \Gamma^a_{ce}\Gamma^e_{bd} - \Gamma^a_{de}\Gamma^e_{bc}$, the Ricci tensor and $\nabla\mathrm{Ric}$. Since R is constant and $\nabla\mathrm{Ric} = 0$, all derivative terms of $E^{(1)}, E^{(2)}$ vanish, and the algebraic terms cancel: $2R \cdot \frac{R}{4}g - \frac{1}{2}R^2 g = 0$ and $2 \cdot \frac{R}{4}\mathrm{Ric} - \frac{1}{2}g \cdot \frac{R^2}{4} = 0$. Check Big03-36. (c) Lemma (d): equal data, unbounded targets. (d) Inspection. (e) Linear algebra; varying c_0 alone covers $\mathbb{R}$ with the data unchanged. (f) Substitution in L_R. Check Big03-46 (rank, kernel; at $R = 12$ the pairs $(c_0, c_G) = (0, 0)$ and $(3, 1)$ give $\lambda = 0$ and $(1, 0)$ gives $\lambda = 1$; the case $R = 0$).

par *Non-claim.* Part (a) is conditional on thm:v5-vac; only the flat de Sitter patch is re-checked here. The rank count concerns the declared parameter space; it does not assert that the tensor family is four-dimensional, and no particular subtraction scheme is shown to admit every member. The parent's own non-claim is kept: ``no value of the absolute vacuum energy is derived; that value stays **open**", and ``Whether a particular scheme admits all of $\mathscr{T}$ is not decided here". No vacuum energy is computed, no value of Λ or c_0 is selected, and U6-sel is not moved. Merged with the user draft's prop:R-vac-sep. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (Further vacuity forms). Hawk07-C-CERT prop:s2-vac, Hawk07-C-Dyn-CERT prop:s2-vac and Hawk07-D-CERT prop:s2-vac are byte-identical, as environments, to Hawk07-E-CERT prop:s2-vac and VC-OB-1-CERT prop:s2-vac (check Big03-33). Hawk07-C-CERT (prescribed conical host): the conserved-source identity on a prescribed host, vacuity for every coupling, not a source law; the supply selects neither a metric nor Λ. Hawk07-C-Dyn-CERT (dynamical conical-formation spacetime): the same weak C^2 form; the inverse source of a prescribed dynamical metric is not an independently selected matter model, and the supply adds no matter law. Hawk07-D-CERT (traversable throat with dynamical conical settling): the same; it selects neither the throat metric, a matter law nor Λ, and the $\hbar$-slot does not occur in $G + \Lambda g$. In every case vacuity quantifies over every coupling $\chi \neq 0$ while the independent κ_{sup} is fixed; it never reads $\chi = \kappa_{\mathrm{sup}}$ (erratum E-R1). Each is paralleled by Proposition .

par *Non-claim.* Separations only; no dynamics proof of version 1 is duplicated, no metric is changed, and no independent matter-action result of a parent is called vacuous. No Einstein dynamics and no derived metric. U6-sel is not moved. Merged with the user draft's rem:R-further-vacuity. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (Hawk07-F, Hawk07-G and Hawk07-H). Hawk07-F-CERT prop:s2-vac, Hawk07-G-CERT prop:s2-vac and Hawk07-H-CERT prop:s2-vac (version 6, site GETs hashed in Appendix) are byte-identical environments to the five above, so the same environment now appears in eight sheets (check Big03-59). Hawk07-F-CERT (semiclassical toroidal throat): the same vacuity form. Hawk07-G-CERT (quantitative semiclassical response): the same. Hawk07-H-CERT (Hawk07-H toroidal-throat response): the same. These three sheets also carry a Casimir coefficient certificate whose coefficient occupies the slot of $\varepsilon\hbar$ (the slot of $\hbar$ in their fixed-mass variant); that certificate is not cited here, and it is not evaluated at κ_{sup} without a declared identification (PC-27).

par *Non-claim.* Documentary lines only; no new proof, no metric, no matter law and no value of Λ. U6-sel is not moved. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is

admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

A restricted O6 minimax on three named thermal channels (partial)

An eigenbasis below is a complete rank-one orthonormal eigenbasis of H, including a choice inside each degenerate eigenspace; this is not pinching into possibly higher-rank eigenspaces.

Lemma (Thermal classification of the named channels, both directions local). *Fix $d \geq 2$, a Hermitian* H *on $\mathbb{C}^d$ and $0 < \beta < \infty$, $\gamma_\beta = e^{-\beta \mathrm{H}}/Z(\beta)$. For finite thermal operations at β:*

• *every thermal operation fixes γ_β;*

• id *is thermal for every* H*;*

• *complete rank-one dephasing $\Delta_{\mathscr{B}}$ is thermal iff* H *is diagonal in $\mathscr{B}$;*

• *a replacement channel $\mathscr{R}_\sigma(X) = \mathrm{Tr}\,(X)\sigma$ is thermal iff $\sigma = \gamma_\beta$. These are the four parts Big02-A prop:v6-thermal(a)–(d)* (source record; not a premise)*; the proof below is local (erratum E-R8: the necessity directions use (a)).*

Proof. (a) An energy-conserving U commutes with $\mathrm{H} \otimes I + I \otimes H_B$, hence with $\gamma_\beta \otimes \gamma_B$, so $\mathrm{Tr}_B[U(\gamma_\beta \otimes \gamma_B)U^\dagger] = \gamma_\beta$. (b) Trivial bath. (c) ``If'': the clock implementation of Proposition (a). ``Only if'': by (a), $\gamma_\beta = \Delta_{\mathscr{B}}(\gamma_\beta)$ is diagonal in $\mathscr{B}$, hence so is $\mathrm{H} = -\beta^{-1}(\log \gamma_\beta + \log Z(\beta)\, I)$. (d) ``If'': the swap implementation. ``Only if'': $\mathscr{R}_\sigma(\gamma_\beta) = \sigma$, so (a) forces $\sigma = \gamma_\beta$. Check Big03-47 (Gibbs preservation by an energy-conserving joint unitary; a non-adapted basis and a replacement by $\sigma \neq \gamma_\beta$ both move γ_β).

par *Non-claim.* Implementation criteria for specified finite channels, not the identification of a physical noise model. The choice $\beta = \beta_{\mathrm{eval}} = 2\pi/(\kappa_{\mathrm{sup}} H)$ is only an evaluation argument. O6 stays open. Merged with the user draft's lem:R-thermal-classification. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Restricted O6 minimax). *PARTIAL. Fix $d \geq 2$, a separately declared Hamiltonian* H *on $\mathbb{C}^d$ with eigenvalues E_i, and $\beta > 0$ (in particular $\beta = \beta_{\mathrm{eval}}$). Let $\mathscr{T}_3(\mathrm{H}, \beta)$ consist of the identity, the complete dephasings $\Delta_{\mathscr{B}}$ in orthonormal eigenbases $\mathscr{B}$ of* H*, and the Gibbs replacement $\mathscr{R}_{\gamma_\beta}$; write $\Xi = Z(\beta)Z(-\beta)$.*

• *Thermality, re-proved by construction (the ``if'' directions of Lemma). The identity is thermal with a trivial bath. $\Delta_{\mathscr{B}}$ is the thermal operation with bath $\mathbb{C}^d$, $H_B = 0$ (so $\gamma_B = I/d$ at every β) and $U = \sum_i P_i \otimes Z^i$, P_i the projectors of $\mathscr{B}$ and $Z = \mathrm{diag}(1, \omega, \ldots, \omega^{d-1})$, $\omega = e^{2\pi \mathrm{i}/d}$. $\mathscr{R}_{\gamma_\beta}$ is the thermal operation with a bath copy of the system and U the swap.*

• *Exact errors. $\varepsilon(\mathrm{id}) = 0$, $\varepsilon(\Delta_{\mathscr{B}}) = 1 - \frac{1}{d}$ and $\varepsilon(\mathscr{R}_{\gamma_\beta}) = 1 - \frac{1}{\Xi}$, certified by the Bell-ray duals $Z_- = eW_d$, $Z_+ = J - fW_d$ ($f = 1, \frac{1}{d}, \frac{1}{\Xi}$, $e = 1 - f$) and the primal inputs of Propositions (a) and , in both Choi signs and both factor orders. In the output-first convention $C_T = W_d - J(T)$, the duals are:* $0, 0$ *for* id*; $(1 - \frac{1}{d})W_d$ and $\Pi - \frac{1}{d}W_d$ ($\Pi = \sum_i |b_i \bar{b}_i\rangle\langle b_i \bar{b}_i|$) for $\Delta_{\mathscr{B}}$; $(1 - f)W_d$ and $\gamma_\beta \otimes I - fW_d$ for $\mathscr{R}_{\gamma_\beta}$; each pair satisfies $Z_\pm \geq 0$, $Z_- \geq C_T$, $Z_+ \geq -C_T$, $\mathrm{Tr}_{\mathrm{out}} Z_\pm = \varepsilon(T) I$, and $Z_+ = Z_- - C_T$. The matching primal inputs and effects are $\Phi = W_d/d$ with effect Φ (dephasing) and $\psi = \sum_i \sqrt{p_i}|ii\rangle$, $p_i = \lambda_i^{-1}/\Xi$, with effect* $\mathrm{proj}\,\psi$ *(replacement); these certify the sign* $\mathrm{id} - T$*, their complements the sign* $T - \mathrm{id}$*, and conjugation by the factor swap gives the input-first certificates. Moreover $0 < 1 - \frac{1}{d} < 1 - \frac{1}{d^2} \leq 1 - \frac{1}{\Xi}$, with equality iff* H *is scalar: the error takes exactly three distinct values on $\mathscr{T}_3(\mathrm{H}, \beta)$.*

• *Restricted minimax.*

$$\inf_{y\in\mathbb{R}}\sup_{T\in\mathscr{T}_3(\mathrm{H},\beta)}|y-\varepsilon(T)|=\frac{1}{2}\Big(1-\frac{1}{Z(\beta)Z(-\beta)}\Big),$$

attained only at y equal to the right side; the equal prior on id *and* $\mathscr{R}_{\gamma_\beta}$ *is a matching decision-theoretic lower certificate. Write* $e_\gamma = 1 - 1/\mathfrak{S}$*; is* $e_\gamma/2$*. The same value holds over the convex hull of* $\mathscr{T}_3(\mathrm{H},\beta)$ *(Corollary).*

• *Comparison. The unrestricted value* $\frac{1}{2}$ *(Theorem) exceeds by exactly* $1/(2\mathfrak{S}) > 0$*. For non-scalar* H*, is strictly increasing in* β*, with limits* $\frac{1}{2}(1-\frac{1}{d^2})$ *as* $\beta\to 0$ *and* $\frac{1}{2}$ *as* $\beta\to\infty$*; for scalar* H *it equals* $\frac{1}{2}(1-\frac{1}{d^2})$ *at every* β*.*

• *Randomized decisions. For coefficient-blind randomized outputs Y under expected absolute loss the minimax value is the same,* $e_\gamma/2$*, and the optimal laws are exactly the laws supported on* $[0, e_\gamma]$ *with mean* $e_\gamma/2$*.*

• *Samples. For* $\lambda = (\frac{2}{3},\frac{1}{3})$*:* $f = \frac{2}{9}$*,* $e_\gamma = \frac{7}{9}$*, minimax* $\frac{7}{18}$*. For* $\lambda = (\frac{1}{2},\frac{1}{3},\frac{1}{6})$*:* $f = \frac{1}{11}$*,* $e_\gamma = \frac{10}{11}$*, minimax* $\frac{5}{11}$*. The evaluation at* β_{eval} *is Proposition .*

Proof. (a) For $\Delta_{\mathscr{B}}$: $\mathrm{H} = \sum_i E_i P_i$, so U commutes with $\mathrm{H}\otimes I + I\otimes 0$; U is unitary; and $\mathrm{Tr}_B[U(X\otimes\frac{I}{d})U^\dagger] = \sum_{i,j} P_i X P_j \frac{1}{d}\mathrm{Tr}(Z^i Z^{-j}) = \sum_i P_i X P_i$. For $\mathscr{R}_{\gamma_\beta}$: the swap commutes with $\mathrm{H}\otimes I + I\otimes \mathrm{H}$, and $\mathrm{Tr}_B[\mathrm{SWAP}(X\otimes\gamma_\beta)\mathrm{SWAP}] = \mathrm{Tr}(X)\gamma_\beta$. (b) $\Omega_d = \sum_i b_i\otimes\overline{b}_i$ for every orthonormal basis, and $J(\Delta_{\mathscr{B}}) = \sum_i P_i\otimes\overline{P}_i$ is the projector onto $\mathrm{span}\{b_i\otimes\overline{b}_i\}\ni\Omega_d$, so $J - \frac{1}{d}W_d \ge 0$, $\mathrm{Tr}_{\mathrm{out}}$ gives $(1-\frac{1}{d})I$, and the Bell overlap is $\frac{1}{d}$. The Gibbs case is Proposition . $\mathfrak{S} = \sum_i \lambda_i^{-1} \ge d^2$ by the AM–HM inequality, with equality iff $\lambda_i = \frac{1}{d}$ for all i, i.e. iff H is scalar. (c) On the three values $0 < v < M$ the worst error of y is $\max(|y|, |y-M|) = \frac{M}{2} + |y - \frac{M}{2}|$ (Lemma (c)), minimized only at $y = \frac{M}{2}$. On the hull, C_T is affine in T, so $\sum_i p_i Z_-^{(i)}$ is a feasible dual for $\sum_i p_i T_i$ and $\varepsilon(\sum_i p_i T_i) \le \sum_i p_i \varepsilon(T_i) \le M$; the hull contains id and $\mathscr{R}_{\gamma_\beta}$, so its supremum is still M and its infimum 0. (d) $\frac{1}{2} - \frac{1}{2}(1-\frac{1}{\mathfrak{S}}) = \frac{1}{2\mathfrak{S}}$. By Proposition (b), $\mathfrak{S}(\beta) = d + 2\sum_{i<j}\cosh(\beta(E_i - E_j))$ is strictly increasing for non-scalar H, $\mathfrak{S}(0^+) = d^2$ and $\mathfrak{S}\to\infty$. (e) The endpoint prior gives $\frac{1}{2}\mathbb{E}(|Y| + |Y - e_\gamma|) \ge \frac{e_\gamma}{2}$; equality needs $Y\in[0,e_\gamma]$ almost surely (equality in the triangle inequality) and equal endpoint risks, i.e. $\mathbb{E}Y = e_\gamma/2$; conversely such laws have endpoint risks $e_\gamma/2$, and $x\mapsto\mathbb{E}|Y-x|$ is convex, so the intermediate target $1-\frac{1}{d}$ has risk at most $e_\gamma/2$. (f) $\mathfrak{S} = \frac{9}{2}$ and 11. Positivity of $\gamma_\beta\otimes I - fW_d$ in general is weighted Cauchy–Schwarz, $|\sum_i v_i|^2 \le (\sum_i \lambda_i |v_i|^2)(\sum_i \lambda_i^{-1})$, on $\mathrm{span}\{|ii\rangle\}$, with positive diagonal entries elsewhere; the replacement output on $\mathrm{proj}\,\psi$ has Bell overlap $\sum_i \lambda_i p_i^2 = f$. Check Big03-37: exact certificates (four duals, two primals) for the three channels on a rational qubit, a non-degenerate qutrit, a degenerate qutrit with a rotated adapted basis and a scalar qubit; the implementations of (a) verified on all matrix units; the hull dual at equal weights; and the failure of covariance for a non-adapted basis; checks Big03-48 (the draft's two spectra, all certificates with the draft's effects, both signs and both orders, exact rationals) and Big03-49 (midpoint risks $\frac{7}{18}$, $\frac{5}{11}$, endpoint-prior bounds, $e_\gamma > 1 - \frac{1}{d}$, the randomized-law characterization on sample laws).

par *Non-claim.* This is a partial result on a declared three-channel subclass and its hull. The unrestricted thermal class keeps minimax $\frac{1}{2}$ (Theorem); no physically identified noise model at T_{GH} is constructed; the channels, the Hamiltonian and the bath are separately declared. O6 stays open. The ``if'' directions of the thermality criteria are re-proved in (a); the ``only if'' directions are those of Big02-A prop:v6-thermal(c),(d), Red06-G-DSS-CERT prop:RC-deph10 and nuADaM01-A thm:v5dephase(a),(b) (source record; not a premise), now re-proved locally as well (Lemma). The decision-theoretic prior is not a Choi dual; no Ky Fan ceiling is substituted for an attained value. The zero-Hamiltonian case is nuADaM01-A thm:negid(a) (source record; not a premise): errors 0, $1-1/d$, $1-1/d^2$, i.e. the scalar case $\mathfrak{S} = d^2$ of (d), not a physical horizon-channel identification. Merged with the user draft's lem:R-restricted-sandwich, prop:R-O6-restricted and cor:R-restricted-gap; the draft's $e_\gamma/2$ and this sheet's $\frac{1}{2}(1 - 1/(Z(\beta)Z(-\beta)))$ are the same number (PC-33). Ledger unchanged: no quantum coefficient is derived; the

global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Corollary (The replacement segment and thermal mixtures). *Let* $\mathscr{T}_t = (1-t)\mathrm{id} + t\mathscr{R}_{\gamma_\beta}$, $0 \le t \le 1$. *Then* $C_{\mathscr{T}_t} = tC_{\mathscr{R}_{\gamma_\beta}}$, $\varepsilon(\mathscr{T}_t) = te_\gamma$ *exactly, with duals* tZ_-, tZ_+ *of the replacement row and the same replacement primal input and effect, in both signs and both orders. The convex hull of* $\mathscr{T}_3(\mathrm{H},\beta)$ *has error range exactly* $[0, e_\gamma]$ *and minimax* $e_\gamma/2$. *Every finite convex mixture* $\sum_j p_j T_j$ *of thermal operations at* β *with* $p_j > 0$ *is itself a thermal operation at* β, *implemented by a Gibbs flag with energies* $-\beta^{-1}\log p_j$, *the branch baths at the same* β, *and the controlled unitary* $\sum_j \mathrm{proj}\, j \otimes U_j$.

Proof. J is affine and $J(\mathrm{id}) = W_d$, so $C_{\mathscr{T}_t} = tC_{\mathscr{R}}$; the scaled duals are feasible with partial trace $te_\gamma I$, and the primal value scales by t. Convexity of $T \mapsto \varepsilon(T)$ bounds the hull by e_γ, and the segment attains every value in $[0, e_\gamma]$. The flag state $\sum_j p_j \mathrm{proj}\, j$ is the Gibbs state of $\sum_j (-\beta^{-1}\log p_j)\mathrm{proj}\, j$ (partition function 1); $\sum_j \mathrm{proj}\, j \otimes U_j$ commutes with the total Hamiltonian when each U_j does, and tracing out flag and baths gives $\sum_j p_j T_j$. Check Big03-50 (the segment at $t = \frac{1}{3}, \frac{1}{2}$; a two-branch flag implementation of $\frac{2}{3}\mathrm{id} + \frac{1}{3}\mathscr{R}_{\gamma_\beta}$ on a qubit, exact on all matrix units).

par *Non-claim.* The flag Hamiltonian, flag state, baths and controls are additional declared implementation data, not a physical reservoir. Merged with the user draft's cor:R-restricted-mixtures. O6 stays open. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (A temperature fixes no channel; the floors are not GH labels). Big01-A prop:nothermal (source record; not a premise): fixing H, the labels $T_{\mathrm{GH}}, S_{\mathrm{GH}}, N_{\mathrm{GH}}$, a capacity promise and a permitted code dimension d determines no positive lower bound on the logical error of channels acting on the code inside Stat, and no reservoir heat. So T_{sup} alone fixes no channel, and $\mathscr{T}_3(\mathrm{H},\beta)$ is a declared subclass with a separately declared Hamiltonian, not a derivation of one. Big02-A thm:coef (source record; not a premise): the floors $1 - 1/d^2$, $1 - 1/d$, $1 - m/d$ have κ-derivative zero. Of the restricted errors, 0 and $1 - 1/d$ are κ-free, and $1 - 1/\mathfrak{S}$ is a function of the declared H and of β only; κ enters only if β is set to $\beta_{\mathrm{eval}} = 2\pi/(\kappa H)$, and that dependence is recorded in Proposition . The shredder floor $1 - 1/d$ of I-C-CERT thm:optimum (dual $(1 - \frac{1}{d})\Omega$, $J(\Delta) - \frac{1}{d}\Omega \ge 0$) and the replacement error $1 - 1/\mathfrak{S}(\sigma)$ of PG-OB-1-CERT thm:s2-exact (primal ψ, dual Y) are the dephasing and replacement rows of the table in Proposition (b); they are κ-independent, and these floors are not GH labels.

par *Non-claim.* Source records restated, not re-proved beyond Proposition . O6 stays open. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (The restricted minimax at the evaluation argument). *EVALUATION. Let* $r(\beta) = \frac{1}{2}(1 - 1/\mathfrak{S}(\beta))$ *be* .

• *If the declared spectrum* $E_1, \dots, E_d$ *of* H *is* κ*-free and non-scalar, then* $\kappa \mapsto r(\beta_{\mathrm{eval}}(\kappa))$, $\beta_{\mathrm{eval}}(\kappa) = 2\pi/(\kappa H)$, *has derivative* $-\frac{2\pi}{\kappa^2 H} r'(\beta_{\mathrm{eval}}) < 0$*; it is a strictly decreasing bijection of* $(0,\infty)$ *onto* $(\frac{1}{2}(1 - \frac{1}{d^2}), \frac{1}{2})$. *Hence the restricted value at* β_{eval} *depends on* κ *only through the evaluation argument, and a supplied value of it would determine* κ *for the declared spectrum, i.e. it would be a supply of the coefficient.*

• *If the spectrum is declared in units of the supplied energy,* $E_i = n_i \kappa_{\mathrm{sup}} H$, *then* $\beta_{\mathrm{eval}} E_i = 2\pi n_i$ *and* $r(\beta_{\mathrm{eval}})$ *is a number independent of* κ_{sup}.

• *Sample. For the qubit* $\mathrm{H} = \kappa_{\mathrm{sup}} H \mathrm{proj}\, 1$ *at* β_{eval} *(*$\beta_{\mathrm{eval}} \cdot \mathrm{gap} = 2\pi$*):* $\mathfrak{S} = (1 + e^{2\pi})^2 e^{-2\pi}$,

$$r(\beta_{\mathrm{eval}}) = \frac{1 + e^{2\pi} + e^{4\pi}}{2(1 + e^{2\pi})^2} \approx 0.499070, \qquad \frac{1}{2} - r(\beta_{\mathrm{eval}}) = \frac{e^{2\pi}}{2(1 + e^{2\pi})^2} \approx 9.302 \times 10^{-4}.$$

Proof. (a) $r'(\beta) = \mathfrak{S}'(\beta)/(2\mathfrak{S}^2) > 0$ by Proposition (d), and $\mathrm{d}\beta_{\mathrm{eval}}/\mathrm{d}\kappa = -2\pi/(\kappa^2 H)$; the limits are those of (d) as $\beta \to \infty$ ($\kappa \to 0$) and $\beta \to 0$ ($\kappa \to \infty$). (b) Substitution. (c) $\mathfrak{S} = (1 + x)(1 + x^{-1})$ with $x = e^{-2\pi}$. Check Big03-58 (exact value; κ_{sup}-independence in (b); sign of the κ-derivative in (a) for a fixed gap; limits).

par *Non-claim.* An evaluation of a proved formula at a declared argument and a declared sample spectrum. It does not lower the unrestricted minimax $\frac{1}{2}$ (Theorem), does not identify H with a horizon Hamiltonian, and does not close O6. A temperature and a Hamiltonian still fix no channel. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (The finite balance selects no implementation and no β). For a finite implementation in the sense of I-C-Th-CERT (finite systems, finite $\beta > 0$, ρ_M, a reservoir H_B prepared in $\tau_B = e^{-\beta H_B}/Z$, the *product* initial state $\rho_M \otimes \tau_B$, a unitary U; $\omega = U(\rho_M \otimes \tau_B)U^\dagger$, $Q_B = \mathrm{Tr}\, H_B(\omega_B - \tau_B)$, $\Delta S_M = S(\rho_M) - S(\omega_M)$, natural logarithms), I-C-Th-CERT prop:th-vacuity records $\beta Q_B = \Delta S_M + I(M:B)_\omega + D(\omega_B \| \tau_B)$. Re-derived here: $D(\omega_B \| \tau_B) = \beta Q_B - S(\omega_B) + S(\tau_B)$ from $\log \tau_B = -\beta H_B - \log Z$, and $I(M:B)_\omega = S(\omega_M) + S(\omega_B) - S(\rho_M) - S(\tau_B)$ by unitarity; adding gives the balance. It holds for every unitary, energy-conserving or not, and every β (numerical check Big03-38, two unitaries, $\beta \in \{\frac{1}{2}, 2\pi\}$, residual $< 10^{-45}$ at 60 digits). Instantiating it at $\beta = \beta_{\mathrm{eval}}$ therefore selects neither an implementation nor a value of β. The number β_{eval} is an evaluation argument, not a reservoir; β_{res} stays unfilled.

par *Non-claim.* An identity re-derived, not a thermodynamic derivation of a temperature; no reservoir is identified with a horizon. Quantification over β re-prepares $\tau_B(\beta)$; it does not keep one reservoir state while changing its label. Merged with the user draft's rem:R-balance. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Initial correlations require the missing term). *If the initial state of MB has marginals ρ_M and τ_B and mutual information I_0, then*

$$\beta Q_B = \Delta S_M + I(M:B)_\omega - I_0 + D(\omega_B \| \tau_B).$$

So the uncorrected balance is a statement for the product hypothesis only (erratum E-R2).

Proof. Unitarity preserves $S(\rho^0_{MB}) = S(\rho_M) + S(\tau_B) - I_0$, so $I(M:B)_\omega = S(\omega_M) + S(\omega_B) - S(\rho_M) - S(\tau_B) + I_0$; the relative-entropy identity $D(\omega_B \| \tau_B) = \beta Q_B - S(\omega_B) + S(\tau_B)$ is unchanged. Adding gives the formula. Check Big03-51: exact swap witness (excited Gibbs probability $\frac{1}{3}$, $\beta\varepsilon = \log 2$, ρ_M the excited state): $\beta Q_B = \frac{2}{3}\log 2$, $\Delta S_M = -\log 3 + \frac{2}{3}\log 2$, $I = 0$, $D = \log 3$; and a correlated input at 60 digits, where the uncorrected formula misses by exactly I_0.

par *Non-claim.* A hypothesis correction, not a reservoir assignment or a thermodynamic law; ``every finite implementation" does not include unspecified initial correlations without this term. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

The spectator lift and O1

Proposition (Monoid separation for the supplied labels). *Let the spectator lift append n idle registers in a fixed state disconnected from every message-bearing operation and change metadata by v (Big02-A thm:v3-monoid, nuADaM01-A thm:v2monoid* (source record; not a premise)*; the lift keeps the prescribed host).*

• *Once* κ_{sup} *is fixed,* T_{sup}, S_{sup} *and* N_{sup} *are invariant under every element of the lift monoid, since they depend only on* $(H, c, G, k_B, \kappa_{\mathrm{sup}})$.

• *The lift does not produce* κ_{sup}*: the data of every lifted account are* κ*-blind, so the fibre of the lifted data contains every* $\kappa > 0$*, and every rule of lifted data has two-point error at least* $\frac{H|\kappa_1 - \kappa_2|}{4\pi k_B}$ *for* $T^{(\kappa)}$ *and infinite worst-case error on* $\mathscr{K}_{\mathrm{un}}$.

• *CONDITIONAL on the cited records: the floors indexed by active dimensions are invariant under the lift (thm:v3-monoid(a), Big02-A cor:v5-monoid(a), thm:v2monoid(a)); under general reorganizations they are not (a bypass replacing an accessible* $\mathscr{R}_{I/d}$ *by* id_d *lowers* $1 - 1/d^2$ *to* 0*, thm:v2monoid(c); declared-code floors can change, thm:v3-monoid(e)).*

• *The lift raises the log-dimension cost by* $n \ln 2$ *(thm:v3-monoid(b)), so the promise* P_η *is not lift-invariant: with* $\mathrm{etaS}_{\mathrm{sup}}/k_B = 10$ *and* $q = 3$ *(a declared sample),* $n_B = 12$ *is the least* n *with* $2^{q+n} > e^{10}$.

• *Red06-G-DSS-CERT prop:RC-monoid9 and V-DST-DSS-CERT prop:VDC-monoid9 (identical statements) give the general rule: generator-wise invariance suffices, and spectator blindness alone implies neither invariance nor monotonicity; this is Proposition (quoted in Remark).*

• *The recovery floor, local. Fix the active code* $\mathscr{E}$*, the logical target and the complete message-bearing access contract, and let the lift act on an accessible channel by* $\mathscr{N} \mapsto \mathscr{A}_n \mathscr{N}$*,* $\mathscr{A}_n(Y) = Y \otimes \tau_n$ *with* τ_n *fixed and input-independent. With* $\varepsilon^*(\mathscr{N}) = \inf_{\mathscr{D}} \frac{1}{2} \| \mathscr{D}\mathscr{N}\mathscr{E} - \mathrm{id} \|_\diamond$ *(decoders on the accessible output; references included),* $\varepsilon^*(\mathscr{A}_n \mathscr{N}) = \varepsilon^*(\mathscr{N})$*. This is the local form of Big02-A cor:v5-monoid(a)* (source record; not a premise).

Proof. (a) Substitution into . (b) Lemma (b),(d) with Theorem (a). (d) Proposition : $n_B = \lfloor 10/\ln 2 - 3 \rfloor + 1 = 12$, and $2^{14} < e^{10} < 2^{15}$. Check Big03-39. (f) With $\mathscr{B}_n = \mathrm{Tr}_{\mathrm{spectator}}$, $\mathscr{B}_n \mathscr{A}_n = \mathrm{id}$. Every decoder $\mathscr{D}$ of $\mathscr{N}$ gives the padded decoder $\mathscr{D}\mathscr{B}_n$ with $\mathscr{D}\mathscr{B}_n \mathscr{A}_n \mathscr{N}\mathscr{E} = \mathscr{D}\mathscr{N}\mathscr{E}$; every padded decoder $\mathscr{D}'$ gives the decoder $\mathscr{D}'\mathscr{A}_n$ of $\mathscr{N}$ with the same composed logical channel. The two infima coincide. Check Big03-52.

par *Non-claim.* Part (c) is conditional on the cited records; (a), (b), (d), (f) are local. Part (f) is the spectator lift with the active code and access contract fixed, not every host-preserving declaration change; a declared bypass can change the active channel and its floor (erratum E-R3), active dimensions are not replaced by padded ambient dimensions, and the padding state is not asserted to be a Gibbs state. Merged with the user draft's prop:R-monoid-sep, whose ε^* is defined here (DC-18). The monoid makes no coefficient: the invariant numbers are evaluations at the supplied input. Dimension growth stays a declared-data operation. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (The actual monoid sentence). Red06-G-DSS-CERT prop:RC-monoid9 and V-DST-DSS-CERT prop:VDC-monoid9 state, verbatim in both sheets: ``Let a monoid $\mathscr{M}$ act on a set $\mathscr{X}$ and let $C: \mathscr{X} \to \mathbb{R}$ be a certificate value. If every generator g satisfies $C(gx) = C(x)$ for all x, every element of $\mathscr{M}$ preserves C; if every generator satisfies $C(gx) \geq C(x)$, every element is non-decreasing for C. Blindness of an action to spectator metadata implies neither.'' Blindness is not preservation: the invariances of Proposition (a),(f) are proved generator-wise from the definition of the lift, not from its blindness. The user draft's paraphrases (``a further spectator-monoid comparison'', ``does not turn operator-space invariance into selection of a source normalization'') are not false, but this sentence is the citation (erratum E-R7; check Big03-56).

par *Non-claim.* Conditional on those records as source records; not a coefficient supply, and no normalization is selected. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (O1 stays open). O1 (a Hilbert space of dimension $\sim \exp(S_{\mathrm{GH}}/k_B)$ derived from the host) stays open.

The integer bound $q \le \lfloor \mathrm{eta} S_{\mathrm{sup}}/(k_B \ln 2) \rfloor$ of Proposition is a function of the separately supplied promise P_η and of κ_{sup}; it is not a host functional, it is not lift-invariant (Proposition (d)), and without P_η the declared dimension is unbounded (Big01-A thm:D(b), thm:D4(c) (source record; not a premise)). Consequently the unrestricted spectator monoid is not in general an action on the promise-restricted domain: repeated padding leaves it while S_{sup} stays fixed; only padding that keeps the promise is admissible there. No new dimension-growth theorem is asserted, and no finite Hilbert space is derived from the host.

par *Non-claim.* A status record, not a closure; an invariant numerical entropy label is not a host-derived capacity functional. O1 stays open. Merged with the user draft's rem:R-O1. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Radiation ratios after the supply

Proposition (The κ-free ratios stay κ-free). *On the declared radiation dictionary of nuADaM01-A thm:coefrad (shared slot κ; $T^{(\kappa)}_{\mathrm{rad}}(t) = \kappa^{3/4}\theta(t)/k_B$, $\theta(t) = (45c^5 h(t)^2/(4\pi^3 G g_*))^{1/4}$, $S^{(\kappa)}_{\mathrm{rad}}(t) = C_S(t)\kappa^{-3/4}$, $C_S = \frac{8\pi^3}{135} g_{*s} k_B \theta^3 a^3 r^3 c^{-3}$):*

• *For every $\kappa > 0$, in particular $\kappa = \kappa_{\mathrm{sup}}$, $T_{\mathrm{rad}}(t)/T_{\mathrm{rad}}(t') = (h(t)/h(t'))^{1/2}$ and $S_{\mathrm{rad}}(t)/S_{\mathrm{rad}}(t') = (h(t)/h(t'))^{3/2}(a(t)/a(t'))^3$.*

• *These ratios, and any finite collection of them together with the admitted data, do not determine κ_{sup}: they take the same values at every κ, so every rule of them has infinite worst-case error for κ and for the absolute labels.*

• *After the supply the absolute values $T^{(\kappa_{\mathrm{sup}})}_{\mathrm{rad}}(t) = \kappa_{\mathrm{sup}}^{3/4}\theta(t)/k_B$ and $S^{(\kappa_{\mathrm{sup}})}_{\mathrm{rad}}(t) = C_S(t)\kappa_{\mathrm{sup}}^{-3/4}$ are evaluations in the declared g_*, g_{*s}, r and the prescribed h, a. Any single absolute value recovers $\kappa = (k_B T_{\mathrm{rad}}/\theta)^{4/3} = (C_S/S_{\mathrm{rad}})^{4/3}$, so supplying one is supplying the coefficient.*

• *On the radiation example $a \propto t^{1/2}$, $h = 1/(2t)$, the entropy ratio is 1 and aT_{rad} is constant, κ-free.*

• *Whole history. More generally, for any positive prefactors $A(t), B(t)$ fixed by declared data and $T_\kappa(t) = A(t)\kappa^{3/4}$, $S_\kappa(t) = B(t)\kappa^{-3/4}$, every record of same-type ratios at declared pairs of times, finite or infinite, equals $(A(t)/A(t'), B(u)/B(u'))_{\mathrm{pairs}}$ and is constant on $\kappa > 0$; the complete exact ratio history does not determine κ, and evaluating at κ_{sup} changes no ratio. For $\kappa_2 = 16\kappa_1$ all temperatures scale by 8, all entropies by $\frac{1}{8}$, and all same-type ratios are unchanged.*

Proof. (a) $\theta \propto h^{1/2}$ and $C_S \propto \theta^3 a^3$; the powers of κ cancel. (b) Lemma (b),(d). (c) Inversion. (d) $h^{3/2}a^3 \propto t^{-3/2}t^{3/2}$ and $ah^{1/2} \propto t^{1/2}t^{-1/2}$. (e) The common power of κ cancels in every coordinate of the record; $16^{3/4} = 8$. Checks Big03-40, Big03-53.

par *Non-claim.* Exact on the declared dictionary. The absolute values become numerical; the ratios do not become a derivation. The slots U, ε_s and β_{res} stay unfilled, and declaring them equal to a function of κ_{sup} would be a second supply. ``The ratios do not determine κ_{sup}" means ratios alone, not a data set already containing κ_{sup}. Merged with the user draft's prop:R-ratio (whole-history form, on the source's time domain $t, t' \le t_*$). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Further OpenAI documentary lines

Remark (Oai280-A, Oai282-A, Oai069-A; documentary only). *Oai280-A* (``Sector-Label Certificates and VOA–Net Separation"): an operational companion to a record on strongly rational unitary vertex operator algebras and conformal nets; its coefficients are Fourier and tensor coefficients and an absent Einstein–scalar characteristic coefficient, and it states that it does not construct the inherited characteristic map or admit its quantum coefficient. *Oai282-A* (``Finite Local-Ward Certificates and Scale–Conformal Separation"): a companion to a record on scale and conformal symmetry in four-dimensional operational quantum field theory; its coefficient is the scalar

improvement normalization, and no inherited characteristic quantum coefficient is constructed. *Oai069-A* (``Certified Categorical Recovery''): its source claims an unramified de Rham quantum geometric Langlands equivalence at irrational shifted levels, which it records as documentary; the categorical equivalence does not itself specify a positive state space, accessible registers, a decoder or a reference-preserving channel; its ``coefficient legs'' are Hilbert multiplicity subsystems. None of the three writes $\hbar$ (check Big03-41); none is a value of $\hbar$ or of κ_{sup} (PC-17, PC-18). The local theorems are distinct from the family claims: Oai280-A thm:comparison is a snapshot–channel–adjoint equivalence for UCP maps through declared algebra inclusions, not a construction of a local net; Oai282-A thm:snapshot is a tensor-free snapshot comparison for declared algebras and maps, constructing no stress tensor, Ward current or conformal action; Oai069-A thm:category is a complex-linear dagger equivalence $\mathrm{Loc}_{d}(E) \simeq \mathrm{bigoplus}_{k=0}^{d-1} \mathrm{Hilb}_{\mathrm{fd}}$ for finite-rank *unitary* local systems on $E = \mathbb{C}/(\mathbb{Z} + i\mathbb{Z})$ with $U^{d} = I$, whose adjoints use the parallel Hermitian structures. That benchmark assumes Hermitian structures, so it would be incorrect to say its own category has none; it is not the catalogue's Family 069 irrational-level assertion, and it selects no physical state, host dimension, gravitational observable or value of $\hbar$ (errata E-R4; check Big03-54).

par *Non-claim.* Documentary only; no family proof is verified, and no OpenAI record is a premise or authorizes the supply. No algebraic level or equivalence of categories is used as a metrological coefficient, a physical-state construction or a closure of O1. Merged with the user draft's rem:R-additional-OpenAI. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (Oai280-B: a stream slot is not the $\hbar$-slot). Documentary. Oai280-B thm:oneslot (``Finite-Confidence Certification of Boundary Reconstruction in Five-Qubit Perfect-Tensor Codes''): under its ordered one-slot streaming class (Assumption ass:stream: carriers in order, at most one live qubit), the infimum over one-slot programs of the half-diamond error $d_{\diamond}(D_{\pi}\mathcal{N}_{123}, \mathrm{id}_{2})$, $d_{\diamond} = \frac{1}{2}\|\cdot\|_{\diamond}$, is exactly $\frac{1}{2}$, and exact recovery in that interface requires peak at least two. The ``slot'' is a stream slot of an apparatus, not the $\hbar$-slot; the record writes no $\hbar$ (check Big03-57).

par *Non-claim.* Not a coefficient supply and not a closure of O1; no gravitational duality or quantum coefficient is imported. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (Oai282-B: a vacuum Ward identity is not a vacuum energy). Documentary. Oai282-B eq:vacward (``From Finite Ward Certificates to Local Conformal Symmetry …{} for the Four-Dimensional Free Massless Scalar'') is the ordered vacuum Ward identity $\sum_{i} \langle \Omega, B_{1}(x_{1}) \cdots (v_{X} B_{i})(x_{i}) \cdots B_{n}(x_{n}) \Omega \rangle = 0$ for declared fields, as joint tempered distributions. It is homogeneous: it fixes no vacuum energy, no renormalized stress value and no value of Λ. That record declares $\hbar > 0$ as a free parameter of its quantization ($[\varphi(x), \varphi(y)] = -i\hbar E(x - y)$); a declared parameter is not a supplied value (PC-30).

par *Non-claim.* Not a vacuum energy, not a value of Λ, not a coefficient supply. Absolute vacuum energy stays open. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Remark (Oai280-C, Oai211-A, Oai212-A). Documentary, one line each. *Oai280-C* (``Operational Certification of Logical-Algebra Recovery''): its two-share privacy lemma lem:privacy, $\mathrm{Tr}_{\overline{E}}(V \rho V^{\dagger}) = \mathrm{Tr}\,(\rho) I_{E} / 2^{|E|}$ for $|E| \le 2$, is a code property, not a metrological coefficient. *Oai211-A* (``Operational Marks on Conditioned Block Trees''): half-diamond marking certificates on conditioned Galton–Watson trees; not a coefficient slot. *Oai212-A* (``Quantum-to-first-passage interfaces''): engineered reductions to first-passage percolation; not a coefficient slot; its $\hbar$ in $H_{e} = \pi\hbar / t_{\mathrm{q}} \, |v_{e}\rangle\langle v_{e}|$ is a unit of its circuit, as in PC-8 (check Big03-59).

par *Non-claim.* Documentary only; no OpenAI record is a premise. Ledger unchanged: no quantum coefficient is

derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Status after version 2, and checks Big03-32–Big03-60

Remark (Status after version 2). O2 stays closed negatively for $\mathscr{K}_{\mathrm{un}}$; the supplied form is an evaluation. O1 stays open (Remark). O6 stays open: Proposition is a partial, restricted minimax, strictly below $\frac{1}{2}$ at finite β; Proposition is an evaluation; the unrestricted value is $\frac{1}{2}$, and a temperature and a Hamiltonian still fix no channel (Remark). The slots U, ε_s, β_{res}, χ (or varkappa$_0$) and α_i are not filled, and the ratio history fills none of them. The vacuum coordinates c_0, c_G, c_1, c_2 are not selected; absolute vacuum energy and a value of Λ stay open (Proposition). C^0/C^1 inextendibility stays open. Host C is not created; O.1 stays NOT_CLOSED; XV-B is not opened; XVI-N and N-Ins.4 are not discharged; U6-sel is not moved; Gate 0 and ST4b stay NOT_SUPPLIED. The global line ``No quantum coefficient is admitted'' is untouched in every other sheet. Nothing is registered or pushed.

par *Non-claim.* A status record, not a closure. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

The checks of version 2 are the executed program checks_Big03A_v2.py (JSON checks_Big03A_v2.json), one consecutive sequence Big03-32–Big03-60: Big03-32–43 for the plan t297u, Big03-44–55 executing the user draft's twelve contracts (its numbers 32–43, renumbered; crosswalk in Appendix , DC-19), and Big03-56–60 for the plan t299u (its 44, 45, 46 are 56, 57, 58; PC-23). The version-1 program checks_Big03A_v1.py (Big03-01–Big03-31) is rerun unchanged: on the version-1 source its output is byte-identical to the frozen version-1 JSON, and on this source all its checks pass (checks_Big03A_v1_on_v2.json). toprule Check Content Result

midrule endhead Big03-32 Provenance: plan sha256; v1 manifest verifies; source copies unchanged; 12 parents equal the site; v1 is an ordered line-subsequence of v2 (insertion-only) pass

Big03-33 Every textbackslash src label exists; 14 statement audits; thm:v5-vac identical in DS-OB-1/VC-OB-1; prop:s2-vac identical in five sheets; monoid9 identical in Red06/V-DST pass

Big03-34 Red06 thm:RC-coef(c): $T\,\mathrm{d}S/\mathrm{d}H = \mathrm{d}X/\mathrm{d}H$, κ-free pass

Big03-35 Injectivity and interval formulas in χ, varkappa$_0$ (varkappa$_0\chi = 1$), α_i pass

Big03-36 Flat de Sitter: $R = 12H^2$, Ric $= \frac{R}{4}g$, $\nabla\mathrm{Ric} = 0$, $G = -3H^2 g$, $E^{(1)} = E^{(2)} = 0$, family collapse, λ onto pass

Big03-37 Restricted O6: implementations; certificates in both signs and both orders on four cases; values; minimax; hull; non-adapted basis; sample value pass

Big03-38 Finite balance (numerical, 60 digits): two unitaries, two β pass

Big03-39 Lift invariance of $T_{\mathrm{sup}}, S_{\mathrm{sup}}$; κ-blind orbit data; $n_B = 12$ sample pass

Big03-40 Radiation ratios, κ-freeness, recovery from one absolute value, radiation example pass

Big03-41 Oai280-A, Oai282-A, Oai069-A lines; no $\hbar$ pass

Big03-42 Version-2 audit: new labels, no duplicates, phrases, authorship, PARTIAL, a non-claim after every new result pass

Big03-43 Frozen XVI-P/Q/R trees OK; the version-1 deliver folder unchanged; every other deliver folder hashed before and after, changes listed (none written by this build) pass

Big03-44 (draft 32) Draft t298u: sha256; every textbackslash lab locator exists in a hashed copy; versions; its 18 labels do not collide with version-1 labels; the four records it calls unretrieved are byte copies equal to the site pass

Big03-45 (draft 33) Adjacent slots: $-a/\mathrm{varkappa}_0^2$; $a = 6$, $[1, 3]$: $6, 2$, midpoint 4, error 2; $a_i = 1, b_i = 3$, $[-2, 4]$: $-5, 13$, 4, 9; zero witness constant; operator injectivity; slot sensitivities pass

Big03-46 (draft 34) Vacuum row $(1, -R/4, 0, 0)$, rank one, kernel; $R = 12$ cases; $R \neq 0$ inseparability; $R = 0$ pass

Big03-47 (draft 35) Thermal classification: energy-conserving unitaries fix $\gamma \otimes \gamma_B$; necessity directions on samples pass

Big03-48 (draft 36) Sandwiches for $\lambda = (\frac{2}{3}, \frac{1}{3})$ ($f = \frac{2}{9}$, $e_\gamma = \frac{7}{9}$) and $(\frac{1}{2}, \frac{1}{3}, \frac{1}{6})$ ($f = \frac{1}{11}$, $e_\gamma = \frac{10}{11}$), both signs, both orders, exact pass

Big03-49 (draft 37) Midpoint risks $\frac{7}{18}$, $\frac{5}{11}$; endpoint priors; randomized-law characterization; $e_\gamma > 1 - \frac{1}{d}$ pass

Big03-50 (draft 38) Segment $C_{\mathscr{T}_t} = tC_{\mathscr{R}}$, scaled witnesses, range $[0, e_\gamma]$; Gibbs-flag implementation of a mixture pass

Big03-51 (draft 39) Balance: exact swap witness; correlated input with the $-I_0$ term (60 digits) pass

Big03-52 (draft 40) Decoder transfer, $\mathscr{B}_n \cdot \mathscr{A}_n$ = id; labels preserved while the capacity promise fails pass

Big03-53 (draft 41) Whole ratio history; $\kappa_2 = 16\kappa_1$: factors 8 and $\frac{1}{8}$ pass

Big03-54 (draft 42) Oai280-A thm:comparison, Oai282-A thm:snapshot, Oai069-A thm:category (unitary, Hermitian) pass

Big03-55 (draft 43) Revision audit: version-1 lines unchanged, labels unique, verdict row for every draft item, DC-12 onward, sanitized provenance, ledger and authorship pass

Big03-56 (plan t299u 44) The actual monoid9 sentence, quoted verbatim pass

Big03-57 (plan t299u 45) Oai280-B thm:oneslot: value $\frac{1}{2}$, peak at least two, stream slot, no $\hbar$ pass

Big03-58 (plan t299u 46) Restricted minimax at β_{eval}: sample value, κ_{sup}-independence for a spectrum in units of $\kappa_{\text{sup}} H$, κ-derivative sign for a fixed gap pass

Big03-59 Plan t299u records: Hawk07-F/G/H prop:s2-vac identical (eight sheets); Oai280-C, Oai282-B, Oai211-A, Oai212-A lines; prop:nothermal, thm:coef, thm:optimum, thm:s2-exact, thm:v5-vac non-claim pass

Big03-60 Errata audit: E-8 (version-1 PC-11 against prop:R-dyn); E-R1–E-R8 present; PC-22 onward pass

bottomrule

Part III. Version 3 additions (requests t336u, t337u, t339u) Everything in Part III is new in version 3. Citations identify source records only; no proof transfer. Each cited label was read in a read-only copy of the site record, fetched by GET from https://enter.grok.me/api/manuscript/<ID> on 25 October 2026. Hashes are in Appendix , and the label and statement verification is in Appendix . Part III integrates three inputs.

• The plan t336u is binding on scope; its corrections are PC8-1 to PC8-22 (Appendix).

• The user's draft t339u (``Big03-A: Version-3 New Findings'') is the backbone of Sections –. Every item is re-proved here, and verdicts F9-1 to F9-30 and draft corrections DC-23 onward are in Appendix .

• The prediction layer t337u is integrated item by item in Section , with verdicts X8-1 to X8-22 (Appendix). Where two inputs state the same item, one statement is kept, in its stronger verified form; the crosswalk is in Appendix . The host is this sheet's prescribed de Sitter host with Hubble rate $H > 0$. The admitted data $\mathfrak{a}$ are as in Section . $\mathscr{K}_{\text{un}}$, $\mathscr{K}_{\text{sup}}$, $D_{\text{un}}(\mathfrak{a}, \kappa) = \mathfrak{a}$ and $D_{\text{sup}}(\mathfrak{a}, \kappa) = (\mathfrak{a}, \kappa)$ are as in Definition . Write $C = \pi c^5/(GH^2)$, so that $T^{(\kappa)} = H\kappa/(2\pi k_B)$, $S^{(\kappa)} = k_B C/\kappa$ and $N^{(\kappa)} = e^{C/\kappa}$ as in . Write $a_d = 1 - 1/d^2$. These are the existing label coordinates; they are not newly assigned temperatures, entropies or dimensions.

Adaptive non-identifiability and vacuum-fibre non-selection

The section title is that of the plan (S 6). Its three parts follow the draft t339u: adaptive acquisition (S), thermal identifiability and dimension assertions (S), and the split and vacuum fibres (S).

Adaptive acquisition: the actual-process hypothesis

Definition (Coefficient-blind adaptive acquisition). Fix $\mathfrak{a}$. A *finite adaptive experiment* on a coefficient family

$\mathscr{K} \subset (0, \infty)$ consists of the following data.

• An initial classical datum and an initial accessible quantum state, including retained memory and references.

• At each classical history h, a decision kernel $p(x \mid h)$ that selects the next experiment x.

• For each (h, x), an accessible process $\mathcal{N}^{h,x}$ followed by an instrument $\{\mathscr{I}_y^{h,x}\}_y$ acting on the retained state.

• A stopping rule that is a function of the history, together with a final tester and a randomized postprocessing (the estimator). Classical outcome spaces are finite or countable. For a history h the subnormalized accessible memory state is ω_h, with $\Pr(h) = \operatorname{Tr} \omega_h$, and

$$\omega_{h,x,y} = p(x \mid h)\, \mathscr{I}_y^{h,x}((\mathcal{N}^{h,x} \otimes \mathrm{id})(\omega_h)).$$

The experiment is *coefficient-blind* if items (i)–(iv) are the same for all $\kappa \in \mathscr{K}$. Any inaccessible apparatus memory that is correlated across rounds must be part of the specified process. Equality of isolated one-round marginal report laws is not enough (Proposition). An experiment that is *placement-blind*, i.e. specified by a function of $\mathfrak{a}$ alone, is coefficient-blind on $\mathscr{K}_{\mathrm{un}}$. An experiment that is merely placement-independent or split-independent need not be coefficient-blind (Proposition (a)).

par *Non-claim.* A definition of a class of experiments. It does not assert that every physical experiment is coefficient-blind, and no instrument is constructed from the host. It replaces the plan's ``placement-blind or coefficient-blind data'' (PC8-19; draft qualification 1). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (Adaptive negative certificate). *Let* E *be coefficient-blind on $\mathscr{K}$ (Definition).*

• *Common laws. Every ω_h, every history probability and the joint law of the transcript, the final tester outcome and the estimate are the same for all $\kappa \in \mathscr{K}$. This persists under a coefficient-blind stopping rule that terminates almost surely, and under conditioning on a common transcript event of positive probability.*

• *Two-point bound. For a scalar target $L(\kappa)$ and every estimate Y of* E, $\max_{i=1,2} \mathbb{E}_{\kappa_i} |Y - L(\kappa_i)| \geq \frac{1}{2} |L(\kappa_1) - L(\kappa_2)|$. *An unbounded target image on $\mathscr{K}$ gives infinite worst-case expected absolute error. In particular, for $\mathscr{K} = (0, \infty)$ this holds for κ, $T^{(\kappa)}$, $S^{(\kappa)}$ and $N^{(\kappa)}$.*

• *Exact finite-range value. On a finite coefficient list, and on a compact interval for a continuous monotone target, the exact minimax expected absolute error is half the range $(u - \ell)/2$ of the target values. Randomization does not lower it. The unique deterministic minimizer is the midpoint. For the three labels on $[\kappa_-, \kappa_+]$ this is the value of Theorem (d).*

• *Packing. For pairwise 2ε-separated $\kappa_1, \ldots, \kappa_M \in \mathscr{K}$,* $\min_j \Pr_{\kappa_j} \{|\widehat{\kappa} - \kappa_j| \leq \varepsilon\} \leq 1/M$.

• *Relative loss on* $(0, \infty)$. *Under $|y/\kappa - 1|$, every estimate has worst-case expected relative loss at least* 1, *and the deterministic decision* 0 *attains exactly* 1. *The same holds for T and S. In particular, blind adaptive acquisition, with quantum memory, stopping and postselection, does not remove the negative coefficient certificate on $\mathscr{K}_{\mathrm{un}}$. The injectivity of Theorem (a) is preserved.*

Proof. (a) Induction on histories: every factor in the recursion for $\omega_{h,x,y}$ is common, so every ω_h and its trace are common. A common tester and a common postprocessing applied to a common state and common classical data give a common joint law. With stopping, the stopped law is the sum of the common contributions of the finite histories at which stopping occurs; almost-sure termination makes this the full law. Restricting to a common event of positive probability and renormalizing preserves equality of laws. (b) Pointwise $|Y - L_1| + |Y - L_2| \geq |L_1 - L_2|$; take expectations under the common law and bound the average by the maximum. If the image is unbounded, take pairs with arbitrarily large separation. The four targets have unbounded range by Theorem (a). (c) The endpoint pair gives at least $(u - \ell)/2$ by (b). The constant midpoint attains it on the whole range $[\ell, u]$, by Lemma (c), because a continuous monotone target fills $[\ell, u]$. A deterministic $y \neq (u + \ell)/2$ is strictly worse by . (d) Under the common law the M accuracy events are pairwise disjoint, so their probabilities sum to at most 1. (e) $y = 0$ has loss

1 at every κ. For a common law Y with $\mathbb{E}|Y| < \infty$, $\mathbb{E}|Y/\kappa - 1| \geq 1 - \mathbb{E}|Y|/\kappa \to 1$ as $\kappa \to \infty$. If $\mathbb{E}|Y| = \infty$, the loss is infinite. For $T = A\kappa$ the same argument applies; for $S = k_B C/\kappa$, let $\kappa \to 0$.

par *Non-claim.* A theorem about the printed acquisition class. It adds no value of κ. The same structure appears in Big04-A-coeff thm:C-adaptive (source record; not a premise), whose proof is not imported. The six Big01-A labels named in the plan are absent from the Big01-A site record (PC8-1). They are not cited, and nothing here rests on them. Check Big03-64. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Corollary (Supply is a data refinement, not information generated by a blind transcript). *Let Z be the record (transcript, tester outcome) of an experiment that is coefficient-blind on* $(0, \infty)$.

• *Adjoining Z to* D_{un} *distinguishes no coefficient values by their report laws, and Theorem applies to* κ, $T^{(\kappa)}$, $S^{(\kappa)}$ *and* $N^{(\kappa)}$.

• *Adjoining* κ_{sup} *instead makes evaluable. Every estimator* $f(\mathfrak{a}, \kappa_{\mathrm{sup}}, Z, \omega)$ *has the same output law, for every* κ_{sup}, *as an estimator* $g(\mathfrak{a}, \kappa_{\mathrm{sup}}, \omega')$ *that does not use Z. The coefficient information lies in the added coordinate, not in the unchanged transcript.*

• *If apparatus settings are chosen using* κ_{sup}, *their laws may vary across supplied accounts. This does not contradict the theorem: its common-kernel hypothesis has then been changed.*

• *No common-law procedure can output a random interval whose upper endpoint is finite almost surely and whose coverage probability is bounded below by a positive constant for every* $\kappa > 0$.

Proof. (a) Theorem (a). (b) Z has a law P that does not depend on κ. Let g draw $Z' \sim P$ from ω' and output $f(\mathfrak{a}, \kappa_{\mathrm{sup}}, Z', \omega)$. (c) Definition . (d) Let $U(Z)$ be the finite upper endpoint. Then
$\Pr_\kappa\{\kappa \text{is covered}\} \leq \Pr\{U(Z) \geq \kappa\} \to 0$ as $\kappa \to \infty$, under the common law.

par *Non-claim.* This is the precise sense in which the supplied-class evaluation is an evaluation only; substituting κ_{sup} does not turn a blind transcript into a derivation or into a check of T_{sup}. Nothing forbids reporting the uninformative interval $(0, \infty)$, using an independently supplied coefficient window, or performing a genuinely coefficient-sensitive calibration. No coefficient distribution or experimental precision is assumed. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Placement blindness and marginal blindness do not imply coefficient blindness). *Both failures below occur in finite declared models.*

• *With a declared reference* $\kappa_{\mathrm{ref}} > 0$, $x = \kappa/\kappa_{\mathrm{ref}}$ *and* $\sigma_\kappa = \frac{1}{1+x}\mathrm{diag}(x, 1)$, *the replacement family* $\mathscr{N}_\kappa = \mathscr{R}_{\sigma_\kappa}$ *on a qubit is declared without reference to any source placement or split. Its optimized recovery error* $\inf_{\mathscr{D}} \varepsilon(\mathscr{D}\mathscr{N}_\kappa) = \frac{3}{4}$ *is constant. Yet its output population* $x/(1+x)$ *is injective in* κ.

• *Let Z be a fair bit and* $b(\kappa) = 1[\kappa \geq \kappa_{\mathrm{ref}}]$. *The reports* $Y_1 = Z$ *and* $Y_2 = Z \oplus b(\kappa)$ *are each fair bits for every* κ, *but* $Y_1 \oplus Y_2 = b(\kappa)$.

Proof. (a) Every $\mathscr{D}\mathscr{R}_\sigma$ is a replacement channel $\mathscr{R}_\tau$, with error $1 - 1/\mathfrak{S}(\tau)$, $\mathfrak{S}(\tau) = \sum_i \lambda_i(\tau)^{-1}$, for full-rank τ with eigenvalues $\lambda_i(\tau)$, and error 1 otherwise (Proposition and its proof). By the AM–HM inequality this is minimized at $\tau = I/2$, with value $1 - \frac{1}{4}$, and $\mathscr{D} = \mathscr{R}_{I/2}$ attains it. The population is read off. (b) Y_2 is a fair bit because Z is, and the XOR is computed directly.

par *Non-claim.* Counterexamples to the implication ``placement-blind (or marginally blind) $\Rightarrow$ coefficient-blind", not constructions of a physical calibration. A constant channel-error certificate does not specify the complete accessible process. Check Big03-64. Ledger unchanged: no quantum coefficient is derived; the global line ``No

quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Thermal identifiability and exact dimension assertions

Proposition (A calibrated Gibbs state is an additional coefficient-sensitive datum). *Fix a separately calibrated finite Hamiltonian* H_S*, independent of* κ*. Declare the tie* $\beta_\kappa = 1/(k_B T^{(\kappa)}) = 2\pi/(\kappa H)$*, which is* β_{eval} *at* $\kappa = \kappa_{\mathrm{sup}}$*, and put* $\gamma_\kappa = e^{-\beta_\kappa \mathrm{H}_S}/\mathrm{Tr}\, e^{-\beta_\kappa \mathrm{H}_S}$*.*

• *If* H_S *is non-scalar,* $\kappa \mapsto \gamma_\kappa$ *is injective. For known eigenvalues* $E_j > E_i$ *with populations* p_i, p_j*,* $\kappa = 2\pi(E_j - E_i)/(H \log(p_i/p_j))$*. The exact mean energy is itself an injective coordinate:*

$$\frac{\mathrm{d}}{\mathrm{d}\kappa}\mathrm{Tr}\,(\mathrm{H}_S\gamma_\kappa) = \frac{2\pi}{H\kappa^2}\mathrm{Var}_{\gamma_\kappa}(\mathrm{H}_S) > 0.$$

For a qubit with gap Δ*, the excited population* $p_1(\kappa) = 1/(1 + e^{2\pi\Delta/(\kappa H)})$ *is a strictly increasing bijection of* $(0, \infty)$ *onto* $(0, \frac{1}{2})$*.*

• *If* H_S *is scalar,* $\gamma_\kappa = I/d$ *for every* κ*.*

• *If the spectrum is declared as* $\mathrm{H}_S(\kappa) = \kappa H A + b(\kappa) I$*, with* A *a fixed dimensionless Hermitian matrix, then* $\gamma_\kappa = e^{-2\pi A}/\mathrm{Tr}\, e^{-2\pi A}$ *is* κ*-free.*

• *Exact identifiability of the law is not exact finite-sample recovery. For a fixed finite number of copies of the full-rank* γ_κ *and a common tester (including common ancillas and adaptive controls), the outcome laws at two positive coefficient values are mutually absolutely continuous. So no such tester distinguishes them without error.*

Proof. (a) $p_i/p_j = e^{\beta_\kappa(E_j - E_i)}$, and $\kappa \mapsto \beta_\kappa$ is a bijection. $\frac{\mathrm{d}}{\mathrm{d}\beta}\mathrm{Tr}\,(\mathrm{H}_S\gamma_\beta) = -\mathrm{Var}_{\gamma_\beta}(\mathrm{H}_S)$ and $\beta_\kappa' = -2\pi/(H\kappa^2)$. A full-rank state has positive variance for a non-scalar H_S. For the qubit, $p_1 = 1/(1 + e^{\beta\Delta})$, with limits 0 and $\frac{1}{2}$. (b), (c) Scalar terms cancel upon normalization, and $\beta_\kappa \kappa H A = 2\pi A$. (d) Positive-definite ρ, σ satisfy $a\sigma \le \rho \le b\sigma$ with $a, b > 0$; tensor powers satisfy $a^n\sigma^{\otimes n} \le \rho^{\otimes n} \le b^n\sigma^{\otimes n}$. A common completely positive tester preserves these operator inequalities on every outcome effect, so both laws have the same null events, and error-free discrimination would need an event of probability 1 under one law and 0 under the other.

par *Non-claim.* This corrects the plan's phrase ``a Gibbs state at the named temperature identifies κ only when the coefficient is supplied" (PC8-20). An exact Gibbs state with an independently known nonzero gap is itself a coefficient-equivalent extra datum, whether or not an input is literally named κ. Neither the state, nor its preparation, nor the tie, nor its probabilities is derived here; the supplied-class evaluation and a physical calibration remain different operations. No horizon detector or physical temperature is constructed. Check Big03-65. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Coefficient-independent thermal operations exist without identifying a temperature). *Fix* H_S *and an orthonormal eigenbasis* $\mathscr{B} = \{b_j\}_{j=0}^{d-1}$*, both independent of* κ*.*

• *The identity, every channel* $X \mapsto VXV^\dagger$ *with* $[V, \mathrm{H}_S] = 0$ *(in particular* $\mathscr{U}_\pi$ *of Theorem), and the complete dephasing* $\Delta_{\mathscr{B}}$ *have the same channel maps and the same implementations (bath Hamiltonian, bath state, joint unitary) at every* $\beta > 0$*. So they are installed identically on* $\mathscr{K}_{\mathrm{un}}$ *and* $\mathscr{K}_{\mathrm{sup}}$*, and their errors* $0, 1$ *(for* $\mathscr{U}_\pi$*) and* $1 - 1/d$ *contain no* κ*.*

• *If* H_S *is scalar,* $\mathscr{R}_{I/d}$ *also has such an implementation: a bath copy and the swap.*

• *If* H_S *is non-scalar, Gibbs replacement* $\mathscr{R}_{\gamma_\kappa}$ *at* β_κ *is not a common coefficient-blind channel family, although its optimized recovery floor* a_d *is constant.*

Proof. (a) The identity and $V \otimes I$ need no bath interaction, and $[V, \mathrm{H}_S] = 0$ makes V energy-conserving. For dephasing put $Z_{\mathscr{B}} = \sum_j e^{2\pi i j/d} |b_j\rangle\langle b_j|$ and $U = \sum_{r=0}^{d-1} Z_{\mathscr{B}}^r \otimes \mathrm{proj}\, r$, with a d-dimensional bath of zero Hamiltonian. Its Gibbs state is I/d at every β. U commutes with $\mathrm{H}_S \otimes I$, and $\mathrm{Tr}_B[U(X \otimes I/d)U^\dagger] = \frac{1}{d}\sum_r Z_{\mathscr{B}}^r X Z_{\mathscr{B}}^{-r} = \Delta_{\mathscr{B}}(X)$. The errors are Theorem (proof) and Proposition (a). (b) For scalar H_S, $\gamma_\beta = I/d$ and the swap commutes with $\mathrm{H}_S \otimes I + I \otimes \mathrm{H}_S$. (c) Proposition (a): the output γ_κ varies with κ. The constant floor is Proposition (a), with the same AM–HM argument in dimension d.

par *Non-claim.* No reservoir at a horizon temperature is constructed. A common thermal-operation implementation need not identify which temperature argument is used to describe it. The unrestricted thermal minimax stays $\frac{1}{2}$ (Theorem), and Proposition stays partial; O6 stays open. Check Big03-66. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Exact dimension equality is coefficient-equivalent; a bound or integer part is not). *Fix the complete geometric data, so that $C > 0$ is fixed.*

• *An exact assertion* $\dim \mathscr{H} = D = N^{(\kappa)}$ *with a known finite integer D is compatible only with $D \geq 2$, and it forces $\kappa = C/\log D$. The set of κ at which $N^{(\kappa)}$ is an integer is exactly $\{C/\log D : D = 2, 3, \dots\}$, a countable discrete set accumulating only at* 0.

• *A known dimension $D \geq 2$ together with only $D \leq N^{(\kappa)}$ gives merely $\kappa \leq C/\log D$. The dimension by itself gives no bound.*

• *Knowing $D = \lfloor N^{(\kappa)} \rfloor$ gives the interval $C/\log(D+1) < \kappa \leq C/\log D$ for $D \geq 2$, and $\kappa > C/\log 2$ for $D = 1$. This is an interval supply, with the risks of Theorem (c) and Proposition on that interval.*

• *Supplying κ_{sup} evaluates $N^{(\kappa_{\mathrm{sup}})}$. It does not supply the equality* $\dim \mathscr{H} = N^{(\kappa_{\mathrm{sup}})}$*, the promise P_η, or a physical Hilbert space.*

Proof. $N^{(\kappa)} = e^{C/\kappa}$ is a strictly decreasing bijection of $(0, \infty)$ onto $(1, \infty)$. Taking logarithms of $D = e^{C/\kappa}$, of $D \leq e^{C/\kappa}$ and of $D \leq e^{C/\kappa} < D + 1$ gives (a)–(c), and $C/\log D \mathrm{downarrow} 0$. (d) separates substitution into a real-valued formula from an additional dimension assertion (Definition).

par *Non-claim.* Countability concerns exact equality at fixed H, c, G; it is not a countability theorem when those vary, and not a non-existence theorem at the exceptional values. Exact equality, its rounding and a capacity bound are different additional contracts, and none is in the ledger. O1 stays open. Check Big03-67. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Split-fibre and vacuum-fibre non-selection in both classes

Definition (Independent source coordinates). Fix the host and the logical account. Adjoin a declared conserved tensor ambiguity $X_\theta = T + \Phi_g(\theta)$, $\theta \in \Theta$. For each θ, adjoin an admissible attribution class Σ_θ of triples $\mathfrak{s} = (T_{\mathrm{o}}, T_{\mathrm{d}}, T_{\mathrm{v}})$ of symmetric divergence-free tensors with $T_{\mathrm{o}} + T_{\mathrm{d}} + T_{\mathrm{v}} = X_\theta$. Assume that changing $(\theta, \mathfrak{s})$ changes none of the retained preparations, channels, instruments, reports, metric, observers, clocks or reference standards, and impose no bridge from κ to $(\theta, \mathfrak{s})$. The enlarged accounts are $\Omega = \{(\mathfrak{a}, \kappa, \theta, \mathfrak{s}) : \mathfrak{s} \in \Sigma_\theta\}$, with $D_{\mathrm{un}} = \mathfrak{a}$ and $D_{\mathrm{sup}} = (\mathfrak{a}, \kappa)$.

On this sheet's host the instance used below is the following. The patch is $g = -\mathrm{d}t^2 + e^{2Ht}\mathrm{d}\mathbf{x}^2$ ($c = 1$). A declared Λ and coupling $\chi \neq 0$ belong to $\mathfrak{a}$. The total is $T_{\mathrm{tot}} = \chi^{-1}(G + \Lambda g) = \chi^{-1}(\Lambda - 3H^2)g$, with energy density $\rho_{\mathrm{tot}} = (3H^2 - \Lambda)/\chi$. The family $\Phi_g(\theta) = c_0 g + c_G G + c_1 E^{(1)} + c_2 E^{(2)}$, $\theta \in \mathbb{R}^4$, is that of Proposition . The vacuum-form class is $\mathrm{Sp}_{\mathrm{vac}} = \{(-\rho_{\mathrm{o}} g, -\rho_{\mathrm{d}} g, -\rho_{\mathrm{v}} g) : \rho_{\mathrm{o}} + \rho_{\mathrm{d}} + \rho_{\mathrm{v}} = \rho_{\mathrm{tot}}\}$.

par *Non-claim.* A particular application must state its Θ and Σ_θ; the definition does not assert that every physical theory has these fibres. The split is an accounting coordinate, and H-split stays a declaration. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (Coefficient supply leaves independent source fibres unresolved). *Under Definition :*

• *Constancy. At fixed* κ *the following are constant as* $(\theta, \mathfrak{s})$ *varies: both data maps; the evaluated labels; the floors, every thermal-operation error, and the restricted and unrestricted O6 values; every radiation-ratio history; and the transcript law of every experiment that is blind to the source coordinates.*

• *Product structure.* $D_{\mathrm{un}}^{-1}(\mathfrak{a}) = (0,\infty) \times \{(\theta, \mathfrak{s})\}$ *and* $D_{\mathrm{sup}}^{-1}(\mathfrak{a}, \kappa_{\mathrm{sup}}) = \{\kappa_{\mathrm{sup}}\} \times \{(\theta, \mathfrak{s})\}$. *The supply removes exactly the* κ *-factor and none of the source factors.*

• *Risks. If a source target q differs at two compatible source accounts, neither class determines it; the worst-case expected absolute error is at least half the separation, and infinite if q is unbounded on the fibre. A binary attribution predicate taking both values has exact minimax risk* $\frac{1}{2}$ *for real-valued absolute-loss predictions and for randomized Boolean classification. A deterministic Boolean classification has worst-case error* 1.

• *Extra coefficient data do not help. Adjoining an exact coefficient-equivalent Gibbs datum (Proposition), an absolute label, or the exact dimension equality (Proposition) selects no* $(\theta, \mathfrak{s})$*, provided the datum depends only on* $(\mathfrak{a}, \kappa)$.

• *Conversely, supplying source coordinates without a bridge to* κ *does not calibrate the coefficient-blind unsupplied class: the fibre* $(0,\infty) \times \{(\theta, \mathfrak{s})\}$ *remains, and every risk of Theorems and is unchanged.*

Proof. (a) Lemma (a). The data and the label formulas have no source-coordinate argument. For transcript laws, run the induction of Theorem (a) with $(\theta, \mathfrak{s})$ in place of κ. (b) Read off the data maps. (c) The two-point inequality under the common decision law gives the first part, and Lemma (d) the second. For a binary target, the decision $\frac{1}{2}$ has loss $\frac{1}{2}$. A randomized Boolean rule that outputs 1 with probability p has errors p and $1 - p$, and $p = \frac{1}{2}$ is optimal. A deterministic rule is wrong at one of the two accounts. (d) The adjoined datum is a function of $(\mathfrak{a}, \kappa)$, so the fibre at fixed κ is unchanged. (e) Hold $(\theta, \mathfrak{s})$ fixed and vary κ: the blind laws remain common.

par *Non-claim.* The theorem concerns functions and experiment laws on the declared fibres. Independent coordinate supply is not local dynamical selection. A species-dependent interaction or a separately supplied matter law changes the data contract and must not be silently counted among source-blind reports. It is the local analogue, for both classes, of Big05-A thm:Big05-flagship and Big05-A prop:Big05-orbit-split (source record; not a premise). Those records state constancy for geometric observables on their split fibre (PC8-2), and their proofs are not imported. No ordinary/dark/vacuum attribution, value of Λ or absolute vacuum energy is selected. Check Big03-68. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Einstein-region consequence and box risk). *On the de Sitter host, Proposition (b),(e) reduces the family to* $\Phi_g(\theta) = \lambda(\theta) g$ *with* $\lambda(\theta) = c_0 - L c_G$ *and* $L = 3H^2/c^2$.

• *The map* $\theta \mapsto \lambda$ *is the row* $(1, -L, 0, 0)$. *It has rank one, image* $\mathbb{R}$ *and kernel*

$$\mathrm{span}\{(L,1,0,0), (0,0,1,0), (0,0,0,1)\}.$$

Supplying κ_{sup}*, or every exact horizon label, leaves* λ *and* c_0 *undetermined and unbounded on* $\mathbb{R}^4$.

• *On the declared box* $c_0 \in [a,b]$, $c_G \in [d,e]$ *(other coordinates arbitrary), the exact deterministic and randomized minimax absolute risk for* λ *is* $\frac{1}{2}[(b-a) + L(e-d)]$.

• *A separately supplied exact* λ *leaves the three-dimensional affine fibre* $\{\theta : c_0 - L c_G = \lambda\}$. *For unit timelike u, the density shift* $(\lambda g)(u,u) = -\lambda$ *has the same spread.*

• *If a field equation $G + \Lambda g = \chi T$ is separately imposed, then $T \mapsto T + \lambda g$ preserves it only together with $\Lambda \mapsto \Lambda + \chi\lambda$. Coefficient supply fixes neither side of this compensated ambiguity.*

• *Rank is not selection. Because the data contain no θ, (a) holds whatever the effective rank of the family. The open-and-dense rank-four statement of DS-OB-1-fibre thm:F-generic* (source record; not a premise) *is a statement in its own topology on metrics. It is not a statement within the fixed Einstein-host class, whose effective rank is one.*

Proof. (a) The row contains no κ. Varying c_0 alone covers $\mathbb{R}$, and the kernel follows by linear algebra. (b) The image of the box is $[a - Le, b - Ld]$. Its half-width is attained by the midpoint, and the equal-weight endpoint prior bounds every randomized decision (Theorem (c)). (c) $g(u,u) = -1$. (d) $\chi(T + \lambda g) = G + (\Lambda + \chi\lambda)g$. (e) The fibre criterion does not use the rank.

par *Non-claim.* The reduction is already printed in Proposition ; the additions are its data-refinement and randomized box consequences. No subtraction scheme is shown to admit the whole family. This is the local counterpart of DS-OB-1-fibre thm:F-einstein(a) and DS-OB-1-fibre cor:F-ranknotsel (source record; not a premise). Absolute vacuum energy stays open. Check Big03-68. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Explicit attribution witnesses; rank does not supply a tensor value).

• *At fixed total $X_* = -\rho_* g$, $\rho_* > 0$ (for instance T_{tot} with $\rho_{\mathrm{tot}} > 0$, i.e. $\Lambda < 3H^2$ and $\chi > 0$), the triples $T_i = -\theta_i \rho_* g$, with $\theta_i \geq 0$ and $\theta_{\mathrm{o}} + \theta_{\mathrm{d}} + \theta_{\mathrm{v}} = 1$, form a conservation-only attribution fibre. All densities are nonnegative and every piece obeys the null energy condition. On the edge $(1 - t, t, 0)$, $0 < t < 1$, the predicate $\theta_{\mathrm{d}} > \theta_{\mathrm{o}}$ changes value at $t = \frac{1}{2}$, and the ratio $t/(1-t)$ ranges over $(0, \infty)$.*

• *On the vacuum-form class $\mathrm{Sp}_{\mathrm{vac}}$, the density ρ_{v} takes every real value, so its risk is infinite. Under the declared condition that all three densities are nonnegative, ρ_{v} covers exactly $[0, \rho_{\mathrm{tot}}]$, and the exact minimax absolute risk is $\rho_{\mathrm{tot}}/2$: nonzero, and the value stays undetermined.*

• *For a declared linear ambiguity map $\Phi_g : \mathbb{R}^r \to \mathscr{V}_g$, full rank means that a supplied value of $\Phi_g(\theta)$ determines θ. It does not make θ a function of a data map that omits both θ and that tensor value.*

• *What is missing. A declared constitutive law $\mathscr{L}_\beta = \{(\beta X_*, (1-\beta)X_*, 0)\}$ meets the fibre of (a) in one point, and an added split-coupled reading $\mathfrak{s} \mapsto \rho_{\mathrm{d}}$ separates it. Each is an additional declaration of a split law or of an observation; neither is κ_{sup}, and κ_{sup} is neither.*

Proof. (a) $\nabla g = 0$, so constant multiples of g are conserved. $T_i(u,u) = \theta_i \rho_* \geq 0$ and $T_i(k,k) = 0$ for null k. The predicate and the ratio are read off the edge. (b) $\rho_{\mathrm{v}} = \rho_{\mathrm{tot}} - \rho_{\mathrm{o}} - \rho_{\mathrm{d}}$; Lemma (c),(d). (c) Equal tensor values means $\theta' - \theta \in \ker \Phi_g$, and full rank removes the kernel. Without the value, every θ gives the same retained data. (d) X_* is fixed and conserved; $\rho_{\mathrm{d}} = t\rho_*$ is injective.

par *Non-claim.* The attribution names are labels; all summands have vacuum-type tensor form, and no ordinary or dark particle sector is constructed or described. An unbounded ratio needs an unbounded compatible ratio; restrictions such as a positive lower bound on the ordinary density change it. The constitutive law of (d) is an example of a missing declaration, not a proposal. Check Big03-68. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Relative-risk alignment

The section title is that of the plan (S 3); its structure follows draft t339u, S 4.

Proposition (Power-law relative risks, with a randomized lower certificate). *Suppose the retained data have one law throughout a parameter fibre on which a positive target fills $[\ell, u]$, $0 < \ell \leq u < \infty$.*

• *Allowing randomized decisions,* $\inf_{\hat{L}} \sup_{L \in [\ell,u]} \mathbb{E}|\hat{L}/L - 1| = (u-\ell)/(u+\ell)$. *The unique deterministic minimizer is the harmonic mean* $y_* = 2\ell u/(\ell+u)$, *and the endpoint prior* $\pi(\ell) = \ell/(\ell+u)$, $\pi(u) = u/(\ell+u)$ *is a matching randomized lower certificate.*

• *On the declared window* $\kappa \in [\kappa_0(1-\delta), \kappa_0(1+\delta)]$, $0 < \delta < 1$, *a label* $L = A\kappa^p$ *with fixed* $A > 0$ *and* $p \neq 0$ *has exact relative risk, deterministic and randomized,*

$$r_p(\delta) = \tanh(|p| \operatorname{artanh} \delta).$$

• *Horizon labels (*$|p| = 1$*):* $r_T = r_S = \delta$, *which is Proposition . Radiation labels (*$|p| = \frac{3}{4}$, *on the fixed positive prefactors of the dictionary of Proposition):* $r_{T_{\mathrm{rad}}} = r_{S_{\mathrm{rad}}} = \tanh(\frac{3}{4}\operatorname{artanh}\delta) < \delta$, *at the same* δ, *the relative width of the coefficient window. More generally* $|p| < 1$ *gives* $r < \delta$, *and* $|p| > 1$ *gives* $r > \delta$.

• *Elasticities. The logarithmic elasticities* $\partial \ln L/\partial \ln \kappa$ *of* $(T_{\mathrm{rad}}, S_{\mathrm{rad}}, T, S)$ *are* $(\frac{3}{4}, -\frac{3}{4}, 1, -1)$, *constant in* κ. *With* $\mathfrak{a}$ *fixed, each label has zero derivative in the coupling coordinate* χ, *which occurs neither in nor in that dictionary.*

• *No identification. Every risk above is positive for* $\delta > 0$. *A window supplies an interval, not the coefficient, and equal relative risks for two labels identify neither* κ *nor a radiation species.*

Proof. (a) A negative decision is no better than 0. For $y \geq 0$ the loss $|y/L - 1|$ is maximized over $[\ell, u]$ at an endpoint, since $y/L - 1$ is affine in $1/L$. Equalizing $y/\ell - 1 = 1 - y/u$ gives y_* with risk $(u-\ell)/(u+\ell)$, and every other y is strictly worse at one endpoint. For every real y,

$$\frac{\ell}{\ell+u}\left|\frac{y}{\ell} - 1\right| + \frac{u}{\ell+u}\left|\frac{y}{u} - 1\right| = \frac{|y-\ell| + |y-u|}{\ell+u} \geq \frac{u-\ell}{u+\ell},$$

and integrating against any randomized law gives the lower bound, since both endpoint values occur on the fibre. (b) $\log(u/\ell) = |p| \log\frac{1+\delta}{1-\delta} = 2|p|\operatorname{artanh}\delta$, and $(u-\ell)/(u+\ell) = \tanh(\frac{1}{2}\log(u/\ell))$. (c) $\tanh(\operatorname{artanh}\delta) = \delta$; and tanh is strictly increasing, with $\operatorname{artanh}\delta > 0$. (d) Differentiate the logarithms; χ does not occur. (e) $u > \ell$.

par *Non-claim.* There is no conflict with Proposition . Its value δ concerns horizon labels with exponents ± 1, and the randomized half of (a) is new on this sheet. The prior is a decision-theoretic witness, not a Choi witness or a physical coefficient distribution. The value $\tanh(\frac{3}{4}\operatorname{artanh}\delta)$ and its endpoint prior are stated in Big04-A thm:DR-relative (source record; not a premise), and the elasticity vector in Big04-A-coeff thm:C-equiv (source record; not a premise); the proofs here are local. Neither risk chooses the window or supplies the coefficient, and χ stays a coordinate separate from κ. Check Big03-69. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Corollary (The exponential dimension label has the same form at matching rates). *For a supplied rate* $K > 0$ *put* $C_K = \pi c^5/(GK^2)$; $C_H = C$. *On the same window,* $N_K^{(\kappa)} = e^{C_K/\kappa}$ *has exact deterministic and randomized relative risk*

$$r_N = \tanh\left(\frac{C_K \delta}{\kappa_0(1-\delta^2)}\right).$$

At $K = H$ *this is the value* r_N *of Proposition . So this sheet's horizon formula and Big04-A's late-label formula coincide when the supplied rates coincide. With* $s = C_K/\kappa_0$,

$$r_N \operatorname{gtreqless} \delta \Leftrightarrow s \operatorname{gtreqless} \frac{1-\delta^2}{\delta} \operatorname{artanh}\delta,$$

and the threshold lies in $(1-\delta^2, 1)$. *In particular* $r_N > \delta$ *whenever* $s \geq 1$, $r_N < \delta$ *for small* s, *and there is no universal ordering without a restriction on* s.

Proof. $\frac{1}{2}\log(u_N/\ell_N) = \frac{C_K}{2\kappa_0}\left(\frac{1}{1-\delta} - \frac{1}{1+\delta}\right) = \frac{C_K\delta}{\kappa_0(1-\delta^2)}$; apply Proposition (a). The comparison follows by applying the

increasing artanh. The threshold bounds follow from $\delta < \operatorname{artanh}\delta = \sum_{j\ge 0}\delta^{2j+1}/(2j+1) < \delta/(1-\delta^2)$.

par *Non-claim.* Not a new coefficient sensitivity, and no contradiction with Big04-A prop:DR-Nrel (source record; not a premise). A free terminal rate is a further unknown coordinate, which coefficient supply alone does not supply. An unbounded positive target image has relative minimax risk 1, attained by the decision 0, although its absolute minimax risk is infinite (Theorem (e)). Check Big03-69. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (An orbit of label values is not automatically a data-confounding orbit). *At fixed positive radiation prefactors and a supplied late rate, the four label coordinates are* $\mathscr{L}(\kappa) = (A\kappa^{3/4}, B\kappa^{-3/4}, D\kappa, E\kappa^{-1})$, *so* $\mathscr{L}(r\kappa) = \operatorname{diag}(r^{3/4}, r^{-3/4}, r, r^{-1})\mathscr{L}(\kappa)$. *This is one coefficient orbit. Any single exact absolute coordinate with known prefactor determines* κ, *and functions invariant under the action (among them the ratio histories of Proposition) contain no coefficient coordinate. On the Big04-A radiation dictionary* $T_{\mathrm{r}} \propto (U\kappa^3/\alpha)^{1/4}$, $S_{\mathrm{r}} \propto \alpha^{1/4}U^{3/4}\kappa^{-3/4}$, *the map* $(\kappa, \alpha, U) \mapsto (r\kappa, r^3\alpha, U)$ *preserves both radiation labels. It is a confounding symmetry only in a data contract that omits* α. *If* α *is retained and fixed, it forces* $r = 1$. *Neither action changes the source coordinates of Definition .*

Proof. Collect powers. $U\kappa^3/\alpha$ and $\alpha^{1/4}\kappa^{-3/4}$ are invariant, and $r^3\alpha = \alpha$ forces $r = 1$. The independence of the source coordinates is the no-bridge hypothesis.

par *Non-claim.* An orbit along which calibrated label values change is not an indistinguishability fibre of data that contain those values, and the word ``coefficient" in the plan's orbit qualification must not replace the dictionary parameter α (PC8-21). The α-dictionary is that of Big04-A-coeff prop:C-orbit (source record; not a premise) (orbits $(U, r\kappa, r^3\alpha)$, confounding only if α is not supplied); this sheet's own dictionary (Proposition) carries no α. χ stays distinct from κ. Check Big03-69. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Proposition (Exact readout-rank criterion in a declared log-linear calibration model). *Let* $x = \log(\kappa/\kappa_{\mathrm{ref}})$, *let* $z \in \mathbb{R}^q$ *collect unknown nuisance logarithms, and declare exact calibrated readouts* $y = M\binom{x}{z}$ *with* $M = (a\ B) \in \mathbb{R}^{m\times(q+1)}$. *The coefficient is determined by the readouts iff* $\ker M \subseteq \{v_x = 0\}$, *equivalently iff* $(1, 0, \dots, 0) \in \operatorname{row} M$. *In this matrix model: (a) for* $m \ge q+1$ *the full-column-rank set is open and dense, with null complement; (b) for* $m \le q$ *almost every* M *fails the criterion, though specially designed matrices (for example the readout* $y = x$*) satisfy it. For the radiation pair in the columns* $(\log\kappa, \log\alpha, \log U)$, *the rows are* $(\frac{3}{4}, -\frac{1}{4}, \frac{1}{4})$ *and* $(-\frac{3}{4}, \frac{1}{4}, \frac{3}{4})$, *and the kernel contains* $(1, 3, 0)$. *With* α *supplied, the two-column matrix has determinant* $\frac{3}{4} \ne 0$.

Proof. Readout fibres are translates of $\ker M$, and x is constant on them exactly under the kernel condition; $(\ker M)^{\perp} = \operatorname{row} M$. (a) Failure of full column rank is the common zero set of the maximal minors, at least one of which is a nonzero polynomial; its zero set is closed, nowhere dense and null. (b) For almost every M the block B has full row rank m, so $Bv_z = -a$ is solvable and $(1, v_z) \in \ker M$. The radiation rows are the logarithms of the dictionary. Then $(\frac{3}{4}, -\frac{1}{4}, \frac{1}{4}) \cdot (1, 3, 0) = 0 = (-\frac{3}{4}, \frac{1}{4}, \frac{3}{4}) \cdot (1, 3, 0)$, and $\det \begin{smallmatrix} 3/4 & 1/4 \\ -3/4 & 3/4 \end{smallmatrix} = \frac{9}{16} + \frac{3}{16} = \frac{3}{4}$.

par *Non-claim.* A local exact-readout result in an explicitly declared matrix model. It is not a transfer of Big04-A-coeff thm:C-generic (source record; not a premise), which concerns readouts R_U of a Hamiltonian with m distinct eigenvalues and is present in the site record (DC-24), and it is not a claim about generic physical instruments. Rank does not create calibrated readouts. Check Big03-69. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Documentary separations

The section follows draft t339u, S 5, merged with plan S S 4–5.

Documentary record (Full static host versus unspecified future; plan S 4). On the complete prescribed de Sitter host the event-horizon radius is already fixed by the metric as c/H, and supplying κ_{sup} does not select it. Future non-selection concerns instead a comparison class whose members share only a prescribed past.

• Big05-A thm:Big05-futures (source record; not a premise): over smooth NEC futures that share a de Sitter past, the future event-horizon radius at $t = 0$ ranges exactly over $[c/H_{\mathrm{E}}, \infty]$. Big02-A thm:IV (source record; not a premise): on smooth futures sharing the past, the junction radius takes every value in $(0, \infty)$, and a fixed past event can be dark for one future and visible for another. Big01-A thm:Efuture (source record; not a premise) is the site-record statement closest to the plan's cor:P5; the plan's cor:P5 and thm:P2 are not in the site record (PC8-1). The same number appended to identical past data cannot distinguish those continuations. This is a data-map comparison, not the import of a continuation law; Theorem proves it locally.

• For a scale factor with finite horizon, $R_e(t) = ca(t)\int_t^\infty a(s)^{-1}\mathrm{d}s$ satisfies $\dot{R}_e = H_a R_e - c$. The difference of two solutions of this identity at the same a is $Ca(t)$, so the identity alone is not a future boundary condition or a horizon-selection rule.

• Big05-A thm:Big05-drift (source record; not a premise) records the closure-free identity $\dot{z} = (1 + z)H_0 - H(z)$ under its drift contract, re-derived locally in Theorem (e).

par *Non-claim.* The optional closures of Big05-A (hyp:Big05-closure) and the conditional laws of Big01-A are not premises, and printed numbers there remain conditional calculations. A past-only randomized horizon classifier on an indistinguishable pair has optimal worst-case success $\frac{1}{2}$; this does not mean that every predictor has success $\frac{1}{2}$ on every future. A conditional drift identity supplies neither a measurement instrument nor an observed residual. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Documentary record (Dark capacity and thermal error types; plan S 4). Big02-A thm:coef (source record; not a premise) concerns injective thermodynamic label coordinates, not injectivity of every dark-capacity quantity. Its def:dark is access-relative and operational. The sentence ``dark capacity is not a host functional'' is not in Big02-A. It is Big05-A prop:Big05-dark(a) (source record; not a premise), for measures that increase when idle qubits are adjoined (PC8-3). The recovery values 0, $1 - 1/d$, $1 - 1/d^2$ of Big02-A thm:v6-early (source record; not a premise) are κ-free at fixed active dimensions and complete access contracts. That statement does not extend to the installed error of non-scalar Gibbs replacement at β_κ, whose κ-dependence is recorded in Proposition . Operational allocation or recovery data need not be functions of geometry alone; this does not make the full future-horizon integral non-geometric, since that integral is a functional of the complete prescribed future.

par *Non-claim.* The supplied-class evaluation selects no access contract, code, noise channel, source placement, dark-capacity realization or stress-energy attribution. No finite horizon-bounded quantum register is derived. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Documentary record (Residual response and curvature sampling; plan S 5). En04-A thm:magic-fibre (source record; not a premise) (version 3) concerns fibres of magic labels, and En04-A thm:P2 (source record; not a premise) requires a declared geometric factor, a probe observable and a coupling witness for a matter-dependent probe effect. (This En04-A label is unrelated to the plan's absent Big01-A thm:P2.) En04-B thm:curvature-sampling (source record; not a premise) (version 4) concerns responding finite samples, i.e. compressions, of the fixed nonzero curvature of settled Host B, with its curvature function and metric g_B unchanged. Its κ_0, κ_1 are neck-mode parameters, not the $\hbar$-slot. A coefficient certificate or channel-error number is not that sampling interface, and a curvature-sampling witness does not establish metric backreaction.

par *Non-claim.* No Host-B sampler, matter-to-metric map, field identification or Host A/Host B comparison is supplied. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Documentary record (Source interfaces, Page histories and catalogue language; plan S 5). I-D prop:v5-u6 (source record; not a premise) tabulates tests of prescriptions for the interface moments Γ_1, Γ_2 (U6-sel), not a physical source-selection rule. Hawk05-B thm:page (source record; not a premise) is an exact Haar-average finite Page curve inside a declared release model; that record states no version (DC-25). Neither record mentions McVittie (PC8-16). A scalar coefficient certificate, a replacement floor and a list of label evaluations supply no release model or entropy history. Oai365-A, Oai265-A, Oai280-A, Oai282-A, Oai069-A and the catalogue sheet use operational coefficient classes, Fourier and tensor coefficients, improvement normalizations, coefficient legs as multiplicity subsystems, and $\hbar$ as a laboratory unit in Oai365-A and Oai265-A (version 2, PC-8, PC-17, PC-18). None of this is a numerical calibration of this slot or an admission into the ledger. The catalogue's line ``No quantum coefficient is admitted'' is present in the current record. These records changed since the version-2 fetch only by added browse links, plus a bibliography in the catalogue (PC8-15), so the version-2 statements stand.

par *Non-claim.* No family proof is verified or used as a premise. No Page curve, decoder synthesis, metric derivation or source normalization follows, and the analytic construction and admission obligations are unchanged. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Operational Cosmological Forecasts: Calibrated Response, Horizon Phase Boundaries, and Falsifiable Evolution Classes

This section integrates the prediction layer t337u item by item; verdicts X8-1 to X8-22 are in Appendix . Its central rule is

specified physical bridge + framework theorem
⇒ quantitative prediction and rejection condition.

Results are split into three kinds, and each is tagged.

• Framework theorem: a consequence of the access, channel and inference definitions already on this sheet.

• Conditional cosmological theorem: a consequence of an explicitly declared expansion history or detector hypothesis.

• Testable hypothesis: an additional equation connecting the framework to measurable evolution; it is declared, never derived. Every future below is a *declared* flat FLRW metric $-c^2\mathrm{d}t^2 + a(t)^2\mathrm{d}\mathbf{x}^2$ on the indicated time range; only the de Sitter host is this sheet's prescribed host. Write $H_a = \dot{a}/a$ and $\varepsilon = -\dot{H}_a/H_a^2$. If $\int^\infty \mathrm{d}s/a < \infty$, put $\chi_e(t) = c\int_t^\infty \mathrm{d}s/a(s)$ and $R_e = a\chi_e$. No literature novelty, experimental confirmation or physical correctness of any closure is claimed. External works are cited as *Source record; not a premise*; their metadata were verified (Appendix), and nothing below rests on them.

Definition (Idealized access contract and access target). Fix a comoving observer γ at $\mathbf{x} = 0$ and a source event $s = (t_s, \mathbf{x}_s)$ with a d-dimensional payload. Declare the idealized contract: if $s \in \bar{J}^-(\gamma)$, the identity channel is available; otherwise every end-to-end channel has an output independent of the input. The *access target* is the least error over the channels allowed by the contract,

$$e_{\min}(s) = (1 - \frac{1}{d^2})1[s \notin \bar{J}^-(\gamma)].$$

On a declared future with $\chi_e(t_s) < \infty$, $s \in \bar{J}^-(\gamma)$ iff $|\mathbf{x}_s| < \chi_e(t_s)$; if $\chi_e = \infty$, every s is in $\bar{J}^-(\gamma)$.

Proof. The identity has error 0. A channel whose output is independent of its input is a replacement channel $\mathscr{R}_\sigma$, whose error is at least a_d, with equality at $\sigma = I/d$ (Propositions and). A radial inward null ray from $\mathbf{x}_s$ reaches 0 iff

$|\mathbf{x}_s| < c\int_{t_s}^{\infty} \mathrm{d}s/a$, and every causal curve moves at most this fast in comoving distance.

par *Non-claim.* An idealized contract, the same values as Big02-A thm:II(c) (source record; not a premise); it does not model noise, decoders or a physical communication channel. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Framework theorem: calibration does not determine cosmic evolution

Theorem (Independent uncertainties survive coefficient supply; framework theorem). *Let $\mathscr{F}$ be a class of declared futures, all with the same past $a(t) = e^{Ht}$ on $t \le 0$. Fix κ_{sup}, the complete past geometry and all past reports and declared registers, so that the predictor input is D_{sup} together with these past data.*

• If $\mathscr{F}$ contains two futures for which a fixed source event s with $t_s \le 0$ is respectively accessible and inaccessible, then every predictor of $e_{\min}(s)$ from those inputs, deterministic or randomized, has worst-case absolute error at least $\frac{1}{2}a_d$. The constant $\frac{1}{2}a_d$ attains this exactly, and a deterministic $\{0, a_d\}$-valued predictor has worst-case error a_d.

• Witness. Let $b(t) = e^{-1/(Ht)}$ for $t > 0$ and $b(t) = 0$ for $t \le 0$. The futures F_1, with $H_a \equiv H$, and F_2, with $H_a(t) = H/(1 + Htb(t))$, are C^∞, share the past, satisfy $\dot{H}_a \le 0$ (the flat-FLRW form of the null energy condition), and accelerate for all t. F_1 has $\chi_e(0) = c/H$, while F_2 has $\chi_e \equiv \infty$. So the event $s = (0, \mathbf{x})$ with $|\mathbf{x}| = 2c/H$ is inaccessible on F_1 and accessible on F_2, and (a) applies.

• Consequently neither κ_{sup} nor $T_{\mathrm{sup}}, S_{\mathrm{sup}}, N_{\mathrm{sup}}$ determines whether an event horizon exists or which future messages arrive. Persistent acceleration does not settle it either, because both witnesses accelerate.

Proof. (a) D_{sup} and the past data coincide on the two futures, and the targets are 0 and a_d. Apply Lemma (b),(c) in expectation, as in Theorem (b),(c). The midpoint $\frac{1}{2}a_d$ has error $\frac{1}{2}a_d$ at both. A deterministic $\{0, a_d\}$ rule is wrong at one of the two. (b) b is C^∞ with all derivatives zero at 0, so H_a is C^∞ and equals H on $t \le 0$. Write $\beta(t) = tb(t)$; for $t > 0$, $\beta' = e^{-1/(Ht)}(1 + 1/(Ht)) \in (0, 1)$, since $e^{-x}(1 + x) < 1$ for $x > 0$. Then $\dot{H}_a = -H_a^2\beta' \le 0$ and $\ddot{a}/a = H_a^2(1 - \beta') > 0$. On F_2, $a(t) = \exp\int_0^t H_a$. Because $\beta(t) \le t$, $H_a \ge H/(1 + Ht)$, so $a(t) \ge 1 + Ht$. And because $\beta(t) \ge t - 1/H$ (from $e^{-x} \ge 1 - x$), $H_a \le H/(Ht) = 1/t$ for $t \ge 1/H$, so $a(t) \le a(1/H)\, Ht$ there. Hence $\int^\infty \mathrm{d}t/a = \infty$. On F_1, $\chi_e(0) = c\int_0^\infty e^{-Ht}\mathrm{d}t = c/H$. Accessibility is Definition . (c) Combine (a), (b) with the fact that the labels are functions of D_{sup}.

par *Non-claim.* To make a cosmic-fate prediction one must specify a future evolution class; supplying κ_{sup} is not that specification. The plan's attribution to Big02-A's smooth-future separation is correct: Big02-A thm:IV(c) (source record; not a premise) states the dark-event pair, with error bound $\frac{1}{2}(1 - 1/d^2)$. The witness here is local, and F_2 is non-analytic, as Big02-A thm:IV(e) (source record; not a premise) requires. No future is selected. Check Big03-72. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Testable hypothesis and conditional theorem: a detector relation

Definition (Detector detailed-balance hypothesis; testable hypothesis). Consider a specified stationary detector experiment with independently calibrated gap $\Delta > 0$ and excitation and de-excitation rates $\Gamma_{\mathrm{uparrow}}(\Delta), \Gamma_{\mathrm{downarrow}}(\Delta) > 0$. The hypothesis DB_β is: $\Gamma_{\mathrm{uparrow}}(\Delta)/\Gamma_{\mathrm{downarrow}}(\Delta) = e^{-\beta\Delta}$ for all gaps in the declared regime. The *tie* is $\beta = 2\pi/(\kappa H)$. Put $\ell(\Delta) = \ln(\Gamma_{\mathrm{downarrow}}(\Delta)/\Gamma_{\mathrm{uparrow}}(\Delta))$.

par *Non-claim.* An operational thermal-response hypothesis, not a consequence of coefficient supply. Rate-ratio

(detailed-balance, KMS) detector temperatures in de Sitter and asymptotically de Sitter FLRW, and the point that a dynamical spacetime does not automatically give the stationary response at the instantaneous $H(t)$, are the subject of Conroy, arXiv:2204.00359, Phys. Rev. D 105, 123513 (2022) (Source record; not a premise). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (Multi-gap thermal consistency and a calibration interface; conditional theorem). *Assume* DB_{β}.

• $\ell(\Delta)/\Delta = \beta$ *for every gap; hence* $\ell(\Delta_1)/\Delta_1 - \ell(\Delta_2)/\Delta_2 = 0$, *and* ℓ *is a line through the origin in* Δ. *A gap-dependent slope rejects* DB_{β} *in the declared regime; it does not refute the definition of the label.*

• *Under the tie, the slope is* $2\pi/(\kappa H)$, *so one exact rate ratio gives* $\kappa_{\mathrm{eff}} = 2\pi\Delta/(H\ell(\Delta))$. *This is a coefficient-sensitive datum, i.e. a supply in the sense of Proposition : it is not a derivation.*

• *Calibration bound. If* $0 < L_- \le \ell(\Delta) \le L_+$, *then* $2\pi\Delta/(HL_+) \le \kappa_{\mathrm{eff}} \le 2\pi\Delta/(HL_-)$, *and the bound is sharp. This is a window of relative half-width* $\delta = (L_+ - L_-)/(L_+ + L_-)$ *about* $\kappa_0 = \frac{2\pi\Delta}{H} \cdot \frac{L_+ + L_-}{2L_+L_-}$. *So the exact relative risks of Proposition apply:* δ *for* κ, T *and* S, *and* $\tanh(\frac{3}{4}\operatorname{artanh}\delta)$ *for the radiation labels.*

• *Non-uniqueness.* DB_{β} *for one detector constrains only a rate ratio; it does not determine the field state.*

Proof. (a) Take logarithms of DB_{β} and divide by Δ. (b) Solve $\ell/\Delta = 2\pi/(\kappa H)$. (c) κ_{eff} is strictly decreasing in ℓ and attains both endpoints; the endpoints are $\kappa_0(1 \mp \delta)$, by direct computation. (d) DB_{β} is a condition on the function ℓ alone and contains no state variable, so any two field states for which the experiment returns the same ℓ satisfy it equally.

par *Non-claim.* No detector, field state, trajectory or coupling is constructed, and no measured rate exists here. Satisfying one detector relation does not identify the surrounding state. Two-detector interactions can distinguish situations with the same single-detector thermal response, per Zhou, Cheng and Yu, arXiv:2211.14747 (2022) (Source record; not a premise). A detector coupled monopole-wise to a non-equilibrium steady state registers only kinematical effects in the model of Passegger and Verch, Ann. Henri Poincaré 27(9), 3507–3551, doi:10.1007/s00023-025-01618-3 (Source record; not a premise). The plan's statement that this record defines detailed-balance effective temperatures is not supported by its abstract (X8-6). Check Big03-73. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Conditional cosmological theorems: horizon phase boundaries

Theorem (Logarithmic horizon threshold; conditional theorem). *Declare* $a(t) = \frac{t}{t_0}L(t)^p$ *for* $t \ge t_0 > 0$, *with* $L(t) = 1 + \ln(t/t_0)$ *and* $p > 0$.

• $H_a = (1 + p/L)/t$ *and* $\ddot{a}/a = \frac{1}{t^2}[\frac{p}{L} + \frac{p(p-1)}{L^2}] = \frac{p(L+p-1)}{t^2L^2} > 0$, *so every member accelerates. Also* $\dot{H}_a < 0$.

• *For* $p > 1$ *there is a finite event horizon:* $\chi_e(t) = \frac{ct_0}{p-1}L(t)^{1-p}$ *and* $R_e(t) = \frac{ct}{p-1}L(t)$. *For* $0 < p \le 1$ *there is none, and every comoving distance is eventually traversed by an inward light signal.*

• $\varepsilon = \dfrac{1 + p/L + p/L^2}{(1 + p/L)^2} \to 1$ *as* $t \to \infty$ *for every* p, *so this common limit does not distinguish horizon status.*

• *Access prediction. For* $p > 1$, $e_{\min}(t, r) = a_d\, 1[r \ge \frac{ct_0}{p-1}L(t)^{1-p}]$ *for a source at comoving distance* r *and time* t; *for* $0 < p \le 1$, $e_{\min} \equiv 0$.

Proof. (a) $\ln a = \ln(t/t_0) + p\ln L$, and $\dot{L} = 1/t$. Differentiating gives $\dot{H}_a$, and $\ddot{a}/a = \dot{H}_a + H_a^2$ gives the displayed form; $L \ge 1$ and $p > 0$ give $L + p - 1 \ge p > 0$. Also $\dot{H}_a = -[(1 + p/L) + p/L^2]/t^2 < 0$. (b) With $u = L(s)$, $\mathrm{d}u = \mathrm{d}s/s$,

$\int_t^\infty \mathrm{d}s/a(s) = t_0\int_{L(t)}^\infty u^{-p}\mathrm{d}u$, which is finite iff $p > 1$, and then equals $t_0 L(t)^{1-p}/(p-1)$. Multiply by c and by a. (c) Divide $-\dot{H}_a$ by H_a^2; $p/L \to 0$. (d) Definition .

par *Non-claim.* Conditional mathematical futures, not a claim about which future the universe follows. The sign of acceleration alone does not decide the ultimate communication structure. No Einstein dynamics or source is attached. Check Big03-74 (symbolic). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (Expansion-envelope access certificate; conditional theorem). *Let a declared expanding future satisfy* $0 \le \varepsilon_- \le \varepsilon(s) \le \varepsilon_+ < 1$ *for all* $s \ge t$*, with* ε *measurable and locally bounded. Then:*

• $a \to \infty$*, and* $R_e(t) = \frac{c}{H_a(t)}\int_0^\infty \exp\left[-x + \int_0^x \varepsilon\,\mathrm{d}y\right]\mathrm{d}x$*, with* $x = \ln(a(s)/a(t))$*;*

• $\frac{c}{H_a(t)(1-\varepsilon_-)} \le R_e(t) \le \frac{c}{H_a(t)(1-\varepsilon_+)}$*;*

• *the envelope is sharp: constant* $\varepsilon \equiv e \in [\varepsilon_-, \varepsilon_+]$ *gives* $R_e(t) = c/(H_a(t)(1-e))$*, so* $R_e(t)$ *takes every value of the closed envelope on the class;*

• *for a comoving source of proper distance* D *on the slice* t*: if* $D < c/(H_a(1-\varepsilon_-))$*, it is accessible in every allowed future; if* $D \ge c/(H_a(1-\varepsilon_+))$*, it is inaccessible in every allowed future. For* D *strictly in between, the status depends on the future, and every predictor of the access indicator from data on* $\{s \le t\}$ *has exact minimax error* $\frac{1}{2}$ *over the class (deterministic Boolean:* 1*). For the illustrative promise* $0 \le \varepsilon \le 0.2$*:* $c/H_a \le R_e \le 1.25\,c/H_a$*.*

Proof. (a) $\mathrm{d}\ln H_a/\mathrm{d}x = \dot{H}_a/H_a^2 = -\varepsilon$, so $H_a(x) = H_a(t)e^{-\int_0^x \varepsilon} \ge H_a(t)e^{-\varepsilon_+ x}$. Then $\mathrm{d}t/\mathrm{d}x = 1/H_a \le e^{\varepsilon_+ x}/H_a(t)$, so x reaches every finite value at a finite time; and $\mathrm{d}t/\mathrm{d}x \ge e^{\varepsilon_- x}/H_a(t) \ge 1/H_a(t)$, so $s \to \infty$ as $x \to \infty$. So $s \mapsto x$ maps $[t,\infty)$ onto $[0,\infty)$, $a \to \infty$, and $\ddot{a}/a = H_a^2(1-\varepsilon) > 0$. Also $\mathrm{d}s/a(s) = \mathrm{d}x/(a(t)e^x H_a(x))$; multiply by $ca(t)$. (b) Bound the exponent between $-(1-\varepsilon_\mp)x$ and integrate. (c) Substitute a constant ε; the value is continuous in e. (d) Accessibility holds iff $D < R_e(t)$ (Definition , with $D = a(t)|\mathbf{x}|$). Combine with (b). In the open band, the futures that continue the same past with constant $\varepsilon \equiv \varepsilon_-$ and $\varepsilon \equiv \varepsilon_+$ after t belong to the class and give $R_e < D$ and $R_e > D$ respectively, by (c). The two-point argument of Theorem (a), with targets 0 and 1, gives $\frac{1}{2}$.

par *Non-claim.* Observations can constrain expansion histories and motivate a future class. They cannot establish that a fitted inequality holds for all future time; that extrapolation stays an explicit model assumption. Check Big03-75. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (Critical-*H* coding bound; conditional theorem). *At a prescribed de Sitter rate* H*, declare a register of* n *sites of dimension* q*, encoding a logical system of dimension* $K \ge 2$*, that exactly corrects every erasure of* r *located sites. Assume the promise* P_η *of Definition for the full register:* $n\ln q \le \eta\pi c^5/(\kappa_{\sup} G H^2)$*. Then*

• *(quantum Singleton)* $\ln K + 2r\ln q \le n\ln q$*, with* $n \ge 2r+1$*;*

• $H^2 \le \frac{\eta\pi c^5}{\kappa_{\sup} G[\ln K + 2r\ln q]}$*; equivalently, the task is impossible under these assumptions whenever*

$H > H_{\mathrm{crit}} = \left(\frac{\eta\pi c^5}{\kappa_{\sup} G[\ln K + 2r\ln q]}\right)^{1/2}$*;*

• *the hypothesis* $K \ge 2$ *is needed:* $K = 1$ *corrects every erasure, and the inequality of (a) fails for it once* $2r > n$*.*

Proof. (a) Let ψ_{RQ} purify the maximally mixed logical state ($S(R) = \ln K$). Exact correctability of the erasure of a set A implies $\rho_{RA} = \rho_R \otimes \rho_A$. If $n \le 2r$, choose disjoint A, B with $|A| = r$, $|B| = n - r \le r$, covering all sites. Then $S(R) + S(A) = S(RA) = S(B)$ and $S(R) + S(B) = S(RB) = S(A)$, so $S(R) = 0$ and $K = 1$. So $K \ge 2$ forces $n \ge 2r+1$.

Then split the sites into A, B of r sites each and the rest C. Purity and decoupling give $S(R) + S(A) = S(BC) \le S(B) + S(C)$ and $S(R) + S(B) = S(AC) \le S(A) + S(C)$. Adding, $S(R) \le S(C) \le (n - 2r)\ln q$. (b) Combine with the promise, and use $\ln K + 2r\ln q > 0$. (c) With $K = 1$, $\ln 1 + 2r\ln q > n\ln q$ when $2r > n$.

par *Non-claim.* This is Big02-A thm:I(c) with lem:singleton (source record; not a premise) ($r = \delta - 1$), solved for H at $\kappa = \kappa_{\sup}$; the proof here is local, and the plan's statement lacked $K \ge 2$ (X8-12). The theorem does not derive the promise, and it does not say that ordinary memories approach the limit. Applying a de Sitter label at an evolving $H(t)$ would require a further, separately declared extension of the promise. Crossing H_{crit} would mean failure of a resource contract, not a physical destruction event. Check Big03-76. Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Testable hypothesis: a dynamical branch and cosmographic tests

Definition (Constant-parameter relaxation hypothesis; testable hypothesis). $\dot H_a = -\alpha(H_a^2 - H_\infty^2)$ with constants $\alpha > 0$, $H_\infty \ge 0$, on the branch $H_0 > H_\infty$, normalized by $a_0 = 1$, $1 + z = 1/a$. With $q = -\ddot a/(a\dot a^2)$ and $j = \mathrm{dddot}\, a/(a\dot a^3)$.

par *Non-claim.* An illustrative phenomenological closure, not a framework-selected law. The parameters q and j are the standard cosmographic parameters, used for instance in Zhang, Li and Xia, Eur. Phys. J. C 77, 434 (2017), doi:10.1140/epjc/s10052-017-5005-4 (Source record; not a premise). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted" is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

Theorem (Expansion history and cosmographic consistency; conditional theorem). *Under Definition :*

• $H^2(a) = H_\infty^2 + (H_0^2 - H_\infty^2)a^{-2\alpha}$, *i.e.* $H(z)^2 = H_\infty^2 + (H_0^2 - H_\infty^2)(1+z)^{2\alpha}$, *and* $\dot H_a > H_\infty$ *throughout.*

• $\varepsilon = \alpha(1 - H_\infty^2/H^2) \in (0, \alpha)$, $q = \varepsilon - 1$, $\dot\varepsilon/H = -2\varepsilon(\alpha - \varepsilon)$, *and in general* $j = 1 - 3\varepsilon + 2\varepsilon^2 - \dot\varepsilon/H$. *Hence* $j - 1 = (2\alpha - 3)(q + 1)$, *and since* $q + 1 = \varepsilon > 0$ *on the branch,* $(j - 1)/(q + 1) = 2\alpha - 3$ *is constant.*

• *Future branches. If* $H_\infty > 0$, *then* $H \to H_\infty$ *and* $R_e \to c/H_\infty$. *If* $H_\infty = 0$ *and* $0 < \alpha < 1$, *then* $a \propto (t - t_*)^{1/\alpha}$, *which is accelerated power-law expansion with* $R_e = c/(H(1 - \alpha))$. *If* $H_\infty = 0$ *and* $\alpha \ge 1$, *there is no event horizon.*

• *Standard case.* $\alpha = \frac{3}{2}$ *gives* $H^2 = H_\infty^2 + (H_0^2 - H_\infty^2)a^{-3}$ *and* $j \equiv 1$, *the flat dust-plus-Λ background when read through the usual Friedmann equations, neglecting radiation. It is not new.*

• *Redshift drift. For comoving source and observer in any flat FLRW,* $\mathrm{d}z/\mathrm{d}t_0 = (1+z)H_0 - H(z)$. *On the branch,* $\mathrm{d}z/\mathrm{d}t_0 = (1+z)H_0 - \sqrt{H_\infty^2 + (H_0^2 - H_\infty^2)(1+z)^{2\alpha}}$.

• *Rejection conditions. A redshift-dependent value of* $(j(z) - 1)/(q(z) + 1)$ *rejects the constant-α hypothesis. After* (H_0, H_∞, α) *are fitted to one dataset, (a) and (e) predict any other.*

Proof. (a) $\mathrm{d}/\mathrm{d}\ln a = H^{-1}\mathrm{d}/\mathrm{d}t$ gives $\mathrm{d}(H^2 - H_\infty^2)/\mathrm{d}\ln a = -2\alpha(H^2 - H_\infty^2)$; integrate. Positivity of $H_0^2 - H_\infty^2$ gives $H > H_\infty$. (b) $\ddot a/a = \dot H + H^2$ and $\mathrm{dddot}\, a/a = \dddot H + 3H\ddot H + \dot H^3$ give the general j-formula. Under the closure $\dot\varepsilon = 2\alpha H_\infty^2 \dot H/H^3$, so $\dot\varepsilon/H = -2\varepsilon(\alpha - \varepsilon)$. Substituting, $j - 1 = -3\varepsilon + 2\varepsilon^2 + 2\varepsilon\alpha - 2\varepsilon^2 = (2\alpha - 3)\varepsilon$. (c) If $H_\infty > 0$, then $\varepsilon \to 0$, and Theorem with $\varepsilon_+ \to 0$ on late intervals gives the limit. If $H_\infty = 0$, then $\dot H = -\alpha H^2$, so $H = 1/(\alpha(t - t_*))$ and $a \propto (t - t_*)^{1/\alpha}$; $\int^\infty \mathrm{d}t/a < \infty$ iff $1/\alpha > 1$, and the constant-ε case of Theorem (c) gives R_e. (d) Substitute $\alpha = \frac{3}{2}$ into (b). (e) Light emitted at t_e and received at t_0 satisfies $\int_{t_e}^{t_0} \mathrm{d}t/a = \mathrm{const}$, so $\mathrm{d}t_e/\mathrm{d}t_0 = a(t_e)/a(t_0)$. Then

$$\frac{\mathrm{d}}{\mathrm{d}t_0}\frac{a(t_0)}{a(t_e)} = (1+z)H_0 - \frac{a(t_0)}{a(t_e)}\cdot\frac{\dot a(t_e)}{a(t_e)}\cdot\frac{a(t_e)}{a(t_0)} = (1+z)H_0 - H(z).$$

(f) By (b) the ratio is constant on the branch.

par *Non-claim.* A conditional consequence of a declared closure; the closure is not derived and no data are fitted

here. The drift relation is the standard one, used for forecasts in Alves, Leite, Martins, Matos and Silva, Mon. Not. R. Astron. Soc. 488(3), 3607–3624 (2019), doi:10.1093/mnras/stz1934 (Source record; not a premise). The framework's contribution is the operational access and uncertainty statements attached to a declared background, not the background itself. Check Big03-77 (symbolic). Ledger unchanged: no quantum coefficient is derived; the global line ``No quantum coefficient is admitted'' is untouched in every other sheet; Host C is not created; O.1 stays NOT_CLOSED; XVI-N is not discharged; XV-B is not opened; U6-sel is not moved. par

What the layer predicts

toprule Result Prediction What would test or qualify it

midrule Theorem Coefficient supply fixes no future access Framework theorem; requires a declared future class

Detector bridge, Theorem Common detailed-balance slope across gaps; interval for κ_{eff} Gap-dependent inferred temperatures reject the simple bridge

Logarithmic family, Theorem Acceleration with or without permanent isolation, threshold $p = 1$ A conditional cosmic-fate extrapolation, not a unique forecast

Envelope, Theorem Guaranteed-access and guaranteed-dark regions, sharp Valid only within the stated future class

Coding bound, Theorem A critical H for a specified protected task ($K \geq 2$) Requires an independently justified capacity promise

Relaxation closure, Theorem $H(z)$, the jerk relation, redshift drift, asymptotic fate Independent expansion measurements can reject the closure

bottomrule The missing ingredient is no longer numerical substitution. It is a physical bridge that observations can reject. No label is converted into a temperature, no capacity promise into a physical Hilbert space, and no access loss into gravitating dark matter.

Status after version 3: non-claims, qualifications and the standing ledger

The supply line. On this sheet κ_{sup} is supplied as an external coefficient. Evaluation at that input is not an admission into the ledger, and no quantum coefficient is derived. Theorem and Corollary make this checkable for adaptive acquisition. Theorem does so for the split and vacuum coordinates, Proposition for calibration windows, and Theorem for future access.

Qualifications established in version 3.

• ``Placement-blind or coefficient-blind'' is replaced by the actual-process hypothesis of Definition ; placement blindness alone is not sufficient (Proposition).

• A Gibbs state can encode the coefficient without an input literally named κ. What is added is a coefficient-sensitive state or readout with independently fixed energy calibration, and exact-law identifiability is not exact finite-sample identification (Proposition).

• The countable exact-dimension conclusion concerns equality $\dim \mathscr{H} = N^{(\kappa)}$ at fixed geometric data, not a bound, a rounding rule or a varying host (Proposition).

• The data maps and report laws of both classes are constant on the source fibres under the printed independence hypotheses. A fibre criterion alone proves neither that a source class is nontrivial nor that its ratios are unbounded; Proposition supplies the witnesses.

• The generic rank-four statement is not a statement within the fixed Einstein-host class, and full rank of a tensor map is not the supply of the tensor value (Propositions (e) and (c)).

• The horizon-label risk δ, the radiation-label risk $\tanh(\frac{3}{4}\operatorname{artanh}\delta)$ and the exponential-label risk are different target-coordinate calculations on the same window; at matching rates the two sheets' exponential-label formulas agree (Corollary).

• A one-dimensional orbit of varying calibrated labels is not a confounding symmetry when those labels are retained; the radiation nuisance orbit requires the omission of α (Proposition).

• Future-horizon ambiguity requires an unspecified continuation, not a globally fixed de Sitter metric. A drift identity or a declared closure is not a measurement or a dynamical derivation (Section).

• A detector rate ratio, a window or an exact dimension equality is a *supply*, not a derivation; each enters only as a declared hypothesis.

What stays open (plan S 7). Absolute vacuum energy; the coefficient slot on the unsupplied class; O1; O6, including physical channel identification and any scope beyond the restricted statement of Proposition (cf. Big04-A thm:DR-O6 (source record; not a premise)); the slots U, ε_s and β_{res} (β_{eval} remains an evaluation argument; PC8-22); H-split, which is still a declaration; any local dynamical selection of ordinary, dark or vacuum pieces; a finite Hilbert-space derivation; a temperature or entropy derivation; every future-evolution law (each future in Section is declared); and every item open in the version-2 ledger. No bridge to χ is supplied. O.1, Gate 0/ST4b, XV-B and XVI-N stay open as recorded. No Host C, Einstein dynamics, Page curve or emergence is created or claimed. Nothing is pushed, registered or written to the site (wiring payload wired:false).

Standing ledger (verbatim). Host A and Host B stay separate. Host C is not created. O.1 stays NOT_CLOSED. XV-B is not opened. XVI-N is not discharged. N-Ins.4 stays unresolved. H2, I3, J2, and T3 stay unresolved. U6-sel is not moved. Gate 0 stays NOT_SUPPLIED. ST4b stays NOT_SUPPLIED. No quantum coefficient is admitted. No compilation is asserted. No Einstein dynamics, derived metric, spacetime emergence, Page curve, island, vacuum energy, or quantized relational time without an external clock is claimed. A source record is not a premise. The OpenAI catalogue is not a premise. The companion does not verify those proofs.

Checks. Checks Big03-61 to Big03-78 are listed in Appendix . The version-1 and version-2 check programs are rerun unchanged. The version-1 program passes on version 3. The version-2 program reproduces its frozen output on version 2. On version 3 it passes every check except Big03-33, whose record list is the version-2 set: its only ``missing'' labels are the version-3 citations of new records, each verified by Big03-61.

appendix

Source records and hashes

Local read-only copies (each byte-identical to https://enter.grok.me/api/manuscript/<ID>, GET 2026-10-24), documentary GETs, the NIST CODATA 2022 pages (https://physics.nist.gov/cgi-bin/cuu/Value?bg, ?c, ?h, ?hbar, ?k, saved 2026-10-24) and the user draft t295u (1202 lines, read-only). Big03-A itself and SG-OB-1-CERT return 404 on the site. toprule Record sha256

midrule endhead Big01-A-v5.tex e1160613ea8e02b37fb45954fe677d89f5fa7cca90062d42b68973b03a2bff1d

Big02-A-v6.tex 98dd1fb1796a8e838796b21f9ad88242497638f86a2c9dae1c14b7efcc8dd804

DS-OB-1-CERT-v5.tex a0805f8eb081a250f78e8074b9de5986ccd23106749df9e0fe5fac2f71e157f9

En08-ST-DSS-CERT-v10.tex 1ccfae3da2f38b8a49ddf0f611a1bb9d39521354ee356333ab044538f26e959f

Hawk07-E-CERT-v6.tex 619afa35d02fa73acc51923d3476e2c9273949edde895b5fdf69ff0184450fcc

I-C-CERT-v6.tex b6b3f3a9473b22fc6c9b21572e8d38b3aad8197af445bcadc5e054995139de8f

I-C-Th-CERT-v6.tex fecf5d3ef10f6993d0d13307f7b57e16d91b3b0f0b36f1cd9b7cd74e1510c226

PG-OB-1-CERT-v5.tex c96ea4631de51c635521ca42fd24337728591676ee9019a24f3ad9fcdcdeb8a2

Red06-G-DSS-CERT-v10.tex 43324387beffae4384e142e1c348b4cebdb6269cadeb640fd1e386f4d2eee247

SG-OB-1-v5.tex 5103c25042a21d302281bbc558a964a5c8a57a8e2ab6700c3d0d01633e110a86

V-DST-DSS-CERT-v10.tex ae5c7d2c863d8c00bd84bda8621f08841dbc40547c97e28b05ef85b911924480

VC-OB-1-CERT-v5.tex d3a93a3afb0e8803d18f230ce824f78c19253f6a4bc841f8ceef763ce14f7cac

nuADaM01-A-v5.tex 813b4ec4c79672d242e9a8f0c09e5048f11e6962beca9b5974c03d91709cdc23

site GET Oai119-A 6242286eb36e6dc81368ee494c438763314939f278746d033c550689f18fe4e7

site GET Oai265-A 4f2e9f5dde4b033de38f0bdb8e227c693a45ba47cbf18e693ceb706ab135fa19

site GET Oai272-A e73d5ae071859ea758d0b839c752e802fe9c77f26bd6972bfb10e9a989ec6fe3

site GET Oai276-A fbac0ed2f318c582aad89ff839b98a8772598d0227bae61a5b6347dafd897d66

site GET Oai290-A 441942579199c01d539b971d970c32316b2381190641b1ece1f505fde56648c7
site GET Oai365-A 1dcc00d5ebfb3a5e656919a640b8c5ef79cf503d0b166372a70e72def31e5c3f
site GET OpenAI 76314b644e51864fa1818f28f49f32a2ce2e06bdd32364ad939595c792cbf99d
site GET XV-B 3b406c26075d4a0c7a07e8e668698247b097cb5c67fedbadad1ec36d738bb7e7
site GET XVI-N 039319fa450f411af67deb00cbbeec0b2fd5b88344028bcc81ec06d002407d1b
PLAN_t294u.md 8a09530309289519e59be104236563385cd808eed839133157819cb80a60bf88
site GET XIV-H 4ef0ab5473fcd778cbcd8c0f173eac85022ad2250b6f9f36243de9423b4298e4
site GET XIV-I 36fcbb0951e9530a247c0b5bc0f35c2db27c6a1029c5cc773fb420e2fe39a2ce
site GET XIV-J 63ae47d900d0b0a3e6978648022b948da6a43ee0268f9adf8f583f21ddfde553
NIST CODATA 2022: G (Value?bg) 15a08aa7990eef3e8f227b154e1e63acad4222ba8e6d491b887704e766324f61
NIST CODATA 2022: c f6224ee0fb5b0bf686db5552958a71ed6cf38e1e558e5f6ffc4078f490dc4737
NIST CODATA 2022: h 6176fb2168da1b68e92651260ca72da1083a22a76649cf156b935bc79a442ceb
NIST CODATA 2022: hbar 381defb1b6b6d491ef4ab81e44ec13f8a10636914d088a1a49c242cb9d960c3c
NIST CODATA 2022: k a65029ab7e2bd997af90f9810ae477dc2cee934b746515d2f3e43573524c1666
user draft attached_t295u.tex a73d80572d4f4e50b5345ddfc086afcb55d54e03b4039f0a9c70fcefda28d6e7
bottomrule Frozen trees (before and after the build): XVI-P ec965c15ae25cd3bb9cc2b3a134e966b19a1803c78d1fe5bf7554da2a8b3aaa6, XVI-Q 0df9a0d10409d31ac0c2d0a47197e3f6e03c7ae258ec5fb775137f66cb0493c4, XVI-R 57187bc6825f5c6ae88633b7279c6c0be57f7c4918fdbc525da4aaf958331edb.

Plan corrections

Each item gives the plan's wording, the actual label and statement, and what this sheet does.

• *Plan S 1, S 4:* Big02-A thm:v3-labels gives $T_w \propto \kappa^{3w/(1+w)}$ with an independent ε_s. *Actual:* thm:v3-labels is the $w = \frac{1}{3}$ certificate, $T_{\mathrm{r}} \propto \kappa^{3/4}$, with the slot U and no ε_s. The general-w statement is thm:v4-wlabels on the dictionary def:v4-labels, where ε_s is a slot that drops out at $w = \frac{1}{3}$. Both labels are cited for their own content.

• *Plan S 2, S 4, S 9 (rem:R-slots):* the radiation coefficient of nuADaM01-A thm:coefrad is an independent slot not filled by the $\hbar$ supply. *Actual:* nuADaM01-A defines $T^{(\kappa)}_{\mathrm{rad}}(t) = \kappa^{3/4}\theta(t)/k_B$ with the same κ as $T^{(\kappa)}_{\mathrm{GH}}$, and calls it the ``shared slot κ". The supply therefore evaluates the radiation labels there (given the declared g_*, g_{*_S}, r). The independent early slot is U (and ε_s) on Big02-A. Recorded in Remark .

• *Plan S 1, S 5, S 8:* ``$G + \Lambda g = \kappa T$ holds for every $\kappa \neq 0$, including κ_{sup}". *Actual:* in Big01-A prop:Dyncert and prop:s2-vac, κ is the gravitational coupling. Big01-A uses the same letter for the $\hbar$-slot. Vacuity holds for every coupling, and the $\hbar$-slot does not occur, so the conclusion stands with the coupling written χ here.

• *Plan S 4:* the supplied half is ``the evaluation they say is required and refused". *Actual:* Big01-A thm:D(c) already prints the evaluation at the SI $\hbar$ and Planck 2018 parameters, and the non-claim of thm:Hcert calls it ``a supplied evaluation". The numbers here reproduce it. The declared class is the new content.

• *Notation:* En08-ST-DSS-CERT writes the slot varkappa and lists the constants c, ℓ, k_B (with no G; S_{GH} has no certificate there, thm:EC-coef(d)). DS-OB-1-CERT writes the slot q.

• *Plan S 4, S 6:* instantiating I-C-Th-CERT at β_{eval} ``evaluates an already-proved error formula". *Actual:* thm:th-cert concerns a reservoir heat $Q_L(\beta)$, not a channel error. Its energy rule has *finite* worst-case error $\geq \varepsilon/4$; only the entropy-unit bill has infinite error. The channel errors instantiated here come from Big01-A thm:Bthermal, thm:Bdephase, nuADaM01-A thm:negid(a) and Red06-G-DSS-CERT prop:RC-deph10.

• *Plan S 4:* ``one late label is not a calibration". *Actual:* thm:v3-labels(d) and thm:v4-wlabels(c) concern the *early* radiation labels with U unsupplied. With U supplied, thm:v3-labels(c) says that an exact T_* does determine κ.

• *Plan S 4, OpenAI:* Oai365-A and Oai265-A write $\hbar$ in their own laboratory and preparation Hamiltonians, as a unit of their pilots. Both still state that no inherited characteristic quantum coefficient is admitted. The plan's separations stand.

• *Macro:* the plan's P_{η} is Big01-A's promise P_{η} of thm:D(c).

• *Plan S 4 on prop:RC-mod10 and prop:VDC-dN10:* ``not an extension obstruction" and ``select no value of Λ" are statements of those propositions' *non-claims*, not of their bodies. prop:VDC-dN10(c) does force the relation $\Lambda = 3aH^2$ among declared data, which is not a value. Both are cited with this precision.

• *Regularity:* prop:s2-vac(a) is pointwise for C^3 metrics and weak for C^2. Proposition re-checks only the FLRW class symbolically and cites the weak C^2 form as conditional.

User draft t295u: integration and verdicts

The addendum t295u (``please also consider below for Big03-A") supplies the draft ``External Coefficient Supply: Evaluation Without Derivation", saved verbatim as attached_t295u.tex (sha256 a73d80572d4f4e50b5345ddfc086afcb55d54e03b4039f0a9c70fcefda28d6e7, 1202 lines; check Big03-31). Version 1 is rebuilt in place with it. Each item was re-proved or checked locally. Where an item overlaps a plan item, a single statement is kept in its stronger verified form under the plan's label; the draft's further labels are added. Verdicts: *verified*, *verified with correction*, *conditional*, *rejected*. toprule Draft item Verdict Where and how Checks

midrule endhead def:R-supply verified merged into Def. (D_{un}, D_{sup}, non-claim) 17

thm:R-unsupplied verified merged; stronger form keeps the plan's fibre/two-point parts and adds reports, randomized rules and the S, N intervals (Thm.) 03, 05, 06, 19

prop:R-refinement verified Prop. 20

prop:R-relative verified Prop. 21

prop:R-eval verified merged; ratios added to (b) 06, 07

prop:R-numerical verified Prop. ; listing executed; enclosures confirmed independently; G_0 equals the CODATA 2022 central value 27, 30

rem:R-units verified Rem. ; plan's Prop. (e) points to it 08, 28

prop:R-radiation verified Prop. ; its non-claim (shared κ is filled) agrees with PC-2 14, 22

lem:R-two-labels verified with correction Lemma ; general-w comparison is thm:v4-wlabels, not thm:v3-labels (DC-3) 23

rem:R-slots verified with correction merged into Rem. ; U added (DC-8); $\beta_{\mathrm{res}}/\beta_{\mathrm{eval}}$ naming adopted 13, 14

prop:R-replacement verified Prop. ; merged with the plan's Gibbs certificates (identical duals) 10, 24

prop:R-floors verified merged; Bell-ray certificates and the dependent family added 09, 11, 29

thm:R-O6-minimax verified Thm. ; ``closes" in the non-claim reworded to ``settles" (DC-11) 25

def:R-capacity verified Def. ; equals Big01-A's P_{η} (PC-9) 16

prop:R-capacity verified merged with the plan's conditional bound 16, 26

prop:R-monoid verified Prop. 16, 26

prop:R-dyn verified with correction merged; plan's statement upgraded to the C^2 weak form with χ (PC-3); the approximation step completed chart-wise with a partition of unity (DC-7) 15

prop:R-analytic-separation verified Prop. ; XIV-H/I/J and XV-B content confirmed in hashed copies 31

rem:R-sep verified with correction merged into Rem. ; RC-mod10 wording (DC-4); ``supplied excerpts" replaced by hashed full copies (DC-5) 01, 02, 31

rem:R-O1O6 verified merged into Rem. —

OpenAI separations paragraph verified already in Rem. (15), with PC-8 02

``Ledger for this sheet only'' rejected as written replaced by the standing ledger verbatim plus the plan's sheet-only line (DC-1) 17

``Release and verification boundary'', ``Provenance limitation'', App. title ``not represented as executed'' rejected as written superseded by executed checks and recorded hashes (DC-2) 01, 27, 31

Bibliography (BIPM, NIST) verified documentary records [BIPM,NIST2022]; CODATA 2018 citation replaced (DC-6) 30

bottomrule No mathematical statement of the draft is rejected. The statements labelled ``rejected as written'' are provenance and ledger paragraphs; they are replaced, not weakened.

Draft corrections.

• *Ledger.* The draft's sheet ledger rewrites the standing ledger (it has ``No inherited characteristic quantum coefficient is admitted'' in place of the global line, and omits ``H2, I3, J2, and T3 stay unresolved'', ``vacuum energy'', and the lines on source records, the OpenAI catalogue and the companion). This sheet keeps the standing ledger verbatim and the plan's sheet-only line.

• *Provenance.* The draft states that no freeze, sha256, checker execution or compilation is asserted and that full parent copies were not supplied. For this build all thirteen parents and the further records are full byte copies with recorded sha256 equal to the site (Appendix); the draft listing and all checks were executed; the build is pinned and byte-identical. The manuscript itself still asserts no compilation as a scope line.

• *thm:v3-labels citation.* In the non-claim of lem:R-two-labels and in rem:R-sep the draft cites thm:v3-labels as the Big02-A comparison. Its general-w example $T = A_0 U^{w/(1+w)} \kappa^{3w/(1+w)}$ is thm:v4-wlabels; thm:v3-labels is $w = \frac{1}{3}$ only (PC-1).

• *prop:RC-mod10.* The draft calls it a ``coefficient-independent proper-time modulus''. The source statement (part (e)) is that neither M_S nor T involves the late rate K. The $\hbar$-slot does not occur either, so the draft's phrase is not false, but the sheet cites the source's own statement.

• *Excerpts.* The draft's ``supplied versions and excerpts, not an independently verified scan'' is replaced: every reference is to a full hashed copy.

• *CODATA.* Verified on saved NIST pages: $G = 6.67430(15) \times 10^{-11}$ (2022), h, c, k_B exact, $\hbar$ exact and non-terminating. The sheet's first-built citation of CODATA 2018 for G was not checked against a saved record and is replaced by the 2022 record; the central value is unchanged and agrees with Big01-A C-6.

• *prop:R-dyn.* The C^2 approximation argument is valid; the local smooth approximations are taken chart-wise on a neighbourhood of the support of the test field, after a partition of unity on the field, and stay Lorentzian for large n . The coupling χ is kept apart from κ_{sup}, as in PC-3.

• *rem:R-slots.* The draft lists ε_s, β_{res} and an independent radiation coefficient, but not the energy constant U, which is the independent early slot on Big02-A; it is added.

• *Citation audit.* Every textbackslash lab label cited in the draft exists in a hashed copy (check Big03-31); its prose citations of XIV-H, XIV-I, XIV-J, XV-B and XVI-N, of I-C-CERT thm:optimum and of PG-OB-1-CERT thm:s2-exact match the records. The draft cites XVI-N without a label; this sheet cites thm:massless-obstruction.

• *Check identifiers.* C-RS-01–C-RS-08 are not reused; see the crosswalk in Section .

• *thm:R-O6-minimax.* ``This closes only …'' is reworded to ``settles only …'' so that no closure wording appears next to O6.

Reconciliation with the plan corrections. The draft's prop:R-radiation non-claim (a model using the same κ has that coordinate filled by the supply; an independent ρ needs a bridge) is consistent with PC-2. The draft's χ, kept apart from κ_{sup}, matches PC-3. Its thm:v3-labels citations are corrected by PC-1 (DC-3). PC-4 to PC-11 are unaffected; PC-9 is confirmed by def:R-capacity.

Build and reproducibility

Pinned build: SOURCE_DATE_EPOCH=1792627200, FORCE_SOURCE_DATE=1, PYTHONHASHSEED=0, TZ=UTC. Two clean builds are compared byte for byte by rebuild_Big03-A-v1.sh, and the manifest is verified with sha256sum -c. The label audit srclabels_Big03-A-v1.py checks that every cited source label exists in a read-only source copy. This records a build. The manuscript asserts no compilation as a scope line.

Version 2: plan corrections PC-12 onward

The numbering continues Appendix . PC-12–PC-21 concern the plan t297u, PC-22 onward the plans t297u and t299u. Each item gives the plan's wording, the actual label and statement, and what this sheet does. 11

• *Plan S 1 (rem:R-chi-slot):* varkappa$_0$ of prop:VDC-coef ``is the gravitational coupling, written χ on this sheet". *Actual:* the source names varkappa$_0$ in $T_\chi(h)$ = varkappa$_0$ s with the label couplings T_σ = varkappa$_0$ $G[g_\sigma]$ and the Einstein normalization varkappa$_0$ = $1/(8\pi G_N)$. It is a coupling slot, but in the Einstein normalization it is the inverse of χ in $G + \Lambda g = \chi T$ (varkappa$_0\chi$ = 1, Proposition (b)). It is written varkappa$_0$ here and kept apart from both χ and κ.

• *Plan S 1:* on an interval every data-only rule for α_i ``has positive worst-case error". *Actual:* prop:VDC-coefid9 gives the exact value $\frac{|b|(v-u)}{2} + |y - a - \frac{b(u+v)}{2}|$ (positive for $u < v$, $b \neq 0$) and infinite error on unbounded ranges; the exact form is re-proved (Proposition (c)).

• *Plan S 1:* ``on a de Sitter region every member of the four-parameter family collapses to $T + (c_0 - \frac{R}{4}c_G)g$". *Actual:* thm:v5-vac assumes a C^5 metric; its region condition is Ric = $\frac{R}{4}g$ (locally de Sitter is an instance), and the family also contains $c_1E^{(1)} + c_2E^{(2)}$, which do not act there; part (c) adds the infinite worst-case error of every geometric rule for λ. The statement is identical in DS-OB-1-CERT and VC-OB-1-CERT.

• *Plan S 3:* nuADaM01-A thm:v2monoid: ``every floor of that sheet is invariant, including the access ladder and the residual". *Actual:* invariance is stated for the spectator action (part (a)) and degradation (part (b)); part (c) shows that a general reorganization (a declared bypass) lowers $1 - 1/d^2$ to 0. Likewise Big02-A thm:v3-monoid(e): floors attached to declared codes, channels or access interfaces can change under general declaration changes.

• *Plan S 3:* Red06 prop:RC-monoid9 and V-DST prop:VDC-monoid9 are ``further monoid forms". *Actual:* the two are the same abstract statement verbatim (check Big03-33): generator-wise invariance suffices, and spectator blindness implies neither invariance nor monotonicity. They are not spectator-lift theorems; their content is version 1's Proposition .

• *Plan S 1, OpenAI:* Oai280-A and Oai282-A: ``their coefficient language is algebraic". *Actual:* Oai280-A's coefficients are Fourier and tensor coefficients and an absent Einstein–scalar characteristic coefficient; Oai282-A's coefficient is the scalar improvement normalization. Both state that no inherited characteristic quantum coefficient is constructed, and neither writes $\hbar$. The separation stands with this wording.

• *Plan S 1, OpenAI:* Oai069-A. The plan's summary matches its abstract. Its ``coefficient legs" are Hilbert multiplicity subsystems, and its appendix records a six-step programme for a different quantum coefficient, ``not completed by categorical recovery".

• *Plan S 2 (prop:R-O6-restricted):* values 0, $1 - 1/d$, $1 - 1/(Z(\beta)Z(-\beta))$ and ``the minimax over this subclass is half the gap between the largest and the smallest". *Verified exactly; not corrected.* Precisions: the minimax is $\frac{1}{2}(1 - 1/(Z(\beta)Z(-\beta))) \in [\frac{1}{2}(1 - \frac{1}{d^2}), \frac{1}{2})$, equal to the left end iff H is scalar; it is unchanged over the convex hull; for degenerate H ``an eigenbasis" means any basis adapted to the eigenspaces (thm:v5dephase(c)), and the value $1 - 1/d$ does not depend on the choice. The ``if" half of each thermality criterion is re-proved by construction.

• *Plan S 3 (prop:R-monoid-sep):* ``conditional on Big02 thm:v3-monoid and nuADaM thm:v2monoid". *Actual:* the invariance of $T_{\mathrm{sup}}, S_{\mathrm{sup}}, N_{\mathrm{sup}}$ needs only that the lift keeps the host data, which is part of the definition of the lift, and is proved locally; only the floor statements (part (c)) are conditional on those records.

• *Plan S 3:* Big02-A thm:v3-monoid: ``spectator-blind monoid; floors invariant". *Actual:* the invariant floors are those indexed by active dimensions; the same theorem records that padding raises the log-dimension cost by $n\ln 2$. A capacity promise such as P_{η} is therefore not lift-invariant (Proposition (d)).

• *Plan t297u, S 5 (``Dynamics vacuity of $G + \Lambda g = \chi T$ for every $\chi \neq 0$, including at the supplied $\hbar$-slot"):* read as ``for every $\chi \neq 0$ while the independent κ_{sup} is fixed" (erratum E-R1); this sheet never writes $\chi = \kappa_{\mathrm{sup}}$.

• *Plan t299u, checks (``Big03-32–43 as written in the insertion", then 44, 45, 46):* the numbers 32–43 were already the executed checks of the plan t297u. One sequence is kept: 32–43 (t297u, unchanged), 44–55 (the draft's contracts 32–43, in order), 56–58 (the plan's 44, 45, 46), and 59–60 (the further t299u records and the errata audit). Nothing is dropped; the crosswalk is in Appendix . Big03-01–31 are rerun, since the original execution assets are present.

• *Plan t299u (``Every locator named in the insertion exists …{} None of the eighteen new labels collides"; ``attributions conditional where only excerpts were used"):* verified (check Big03-44). Every locator was read here in a full byte copy equal to the site record, so no attribution rests on an excerpt; the records stay source records, not premises.

• *Plan t299u, Big01-A prop:nothermal (``T_{sup} alone fixes no channel"):* the actual statement is that H, the labels, a capacity promise and d determine no positive lower bound on the logical error of channels on the code inside Stat, and no reservoir heat. Restated with that content in Remark ; the plan's sentence is its consequence.

• *Plan t299u, Big02-A thm:coef:* verified; its κ-derivative-zero statement covers the floors $1 - 1/d^2$, $1 - 1/d$, $1 - m/d$. The Gibbs-replacement error at β_{eval} does depend on κ through β_{eval} (strictly decreasing for a κ-free non-scalar spectrum, hence injective) unless the spectrum is declared in units of $\kappa_{\mathrm{sup}} H$ (Proposition).

• *Plan t299u, Hawk07-F/G/H-CERT prop:s2-vac:* verified, byte-identical to the five other copies. Precision: these three sheets also carry a Casimir coefficient certificate whose coefficient occupies the slot of $\varepsilon\hbar$ (of $\hbar$ in the fixed-mass variant). It is not cited, and it is not evaluated at κ_{sup} (Remark).

• *Plan t299u, Oai280-B thm:oneslot:* verified (value $\frac{1}{2}$ in $d_{\diamond} = \frac{1}{2}\|\cdot\|_{\diamond}$; ``exact recovery in this interface requires peak at least two"). The record's subject is boundary reconstruction in five-qubit perfect-tensor codes; the stream interface is its Assumption ass:stream.

• *Plan t299u, Oai280-C (``privacy lemmas for the same operational companion"):* Oai280-C is a separate record, ``Operational Certification of Logical-Algebra Recovery"; its privacy statement is lem:privacy (two-share privacy).

• *Plan t299u, Oai282-B eq:vacward (``a Ward identity for declared fields"):* verified. Precision: the record declares $\hbar > 0$ as a parameter of its free-field quantization and writes it fifteen times; a declared parameter is not a supplied value, and the Ward identity is homogeneous.

• *Plan t299u, Oai211-A and Oai212-A:* verified as operational marking (conditioned Galton–Watson trees) and quantum-to-first-passage interfaces. Oai212-A writes $\hbar$ as a unit of an engineered Hamiltonian, as in PC-8.

• *Plan t299u, thm:v5-vac non-claim (``no absolute vacuum energy is selected"):* the parent's words are ``no value of the absolute vacuum energy is derived; that value stays **open**", together with ``Whether a particular scheme admits all of $\mathscr{F}$ is not decided here". Both are quoted in Proposition .

• *Restricted formula forms:* the plan t297u's $1 - 1/(Z(\beta)Z(-\beta))$ with half the gap, this sheet's $\frac{1}{2}(1 - 1/(Z(\beta)Z(-\beta)))$, the draft's $e_\gamma/2$ with $e_\gamma = 1 - 1/(Z(\beta)Z(-\beta))$, and the plan t299u's $e_\gamma/2$ are the same number. No difference is found; the verified form is kept.

• *Plan t299u, Big02-A prop:v6-thermal:* verified: (a) is Gibbs preservation, (b)–(d) are the identity, dephasing and replacement criteria (erratum E-R8). nuADaM01-A thm:negid(a) is the scalar case of Proposition (d), which contains the draft's cor:R-restricted-gap.

• *Plan t299u (``Spectator action preserves T_{sup}, S_{sup} and the recovery floor"):* verified locally under the stated lift (Proposition (f)), in agreement with Big02-A cor:v5-monoid(a). All other plan citations were found as stated:

thm:RC-coef, prop:v6-thermal, prop:RC-deph10, thm:v5dephase, prop:th-vacuity, thm:negid(a), cor:v5-monoid, thm:D(b), thm:D4(c), thm:coefrad(d), and prop:s2-vac in Hawk07-C-CERT, Hawk07-C-Dyn-CERT and Hawk07-D-CERT.

Version 2: errata to version 1

The lines of version 1 are retained verbatim. The following of its sentences are superseded or completed.

• *Title and date.* The version-1 lines textbackslash title{…(version 1)} and textbackslash date{24 October 2026 (version 1)} are superseded by the version-2 title page, which is set by inserted lines after them.

• *Proposition , non-claim:* ``The thermality criteria in (b) and (c) are conditional on prop:RC-deph10". For (c), replacement by I/d, the source record is Big02-A prop:v6-thermal(d), not prop:RC-deph10. Both directions of both criteria are now proved locally (Lemma , using Gibbs preservation, prop:v6-thermal(a)): $\mathscr{R}_{I/d}$ fixes γ_β iff $\gamma_\beta = I/d$, i.e. iff H is scalar, and $\Delta_{\mathscr{B}}$ fixes γ_β iff H is diagonal in $\mathscr{B}$.

• *Remark , item on prop:s2-vac:* it lists Hawk07-E-CERT and VC-OB-1-CERT only. Completed by Remark : the same environment appears verbatim in five sheets.

• *Conventions and PC-3:* ``The gravitational coupling in $G + \Lambda g = \kappa T$, which the source sheets also write κ, is written χ here". This holds for Big01-A, Hawk07-E-CERT and VC-OB-1-CERT. V-DST-DSS-CERT writes its coupling $\mathrm{varkappa}_0$, with an inverse normalization (PC-12).

• *Remark :* the separations list omits thm:RC-coef, prop:VDC-coef, prop:VDC-coefid9, thm:v5-vac, prop:v6-thermal, prop:th-vacuity and the monoid records. Completed in Part II.

• *Release boundary and Appendix :* the list of read-only parent copies is extended by Appendix .

• *Checks section and abstract:* ``Checks Big03-01–Big03-31 pass" remains true of the version-1 program; version 2 adds Big03-32–Big03-60 (Section).

• *Plan correction PC-11 of version 1* (from the user draft's E-R5): ``Proposition re-checks only the FLRW class symbolically and cites the weak C^2 form as conditional". The proof of Proposition (a) in version 1 itself contains a local chart-wise approximation argument with a partition of unity for the weak C^2 form (DC-7 of version 1). The correct description separates that local proof from the separate FLRW symbolic check (check Big03-60). The local proof is a written argument; only the FLRW part is machine-checked. No mathematical statement of version 1 was found to be false.

Errata to the insertion block (E-R1–E-R8). The user draft's errata E-R1–E-R6 and the plan t299u's four corrections are recorded here; none is made as an edit of version 1.

• *Source-coupling type* (draft). Every phrase ``including at the supplied $\hbar$-slot" in the dynamics discussion (plan t297u, PC-22) reads ``for every $\chi \neq 0$ while the independent external κ_{sup} is fixed"; never $\chi = \kappa_{\mathrm{sup}}$. Adopted; it is also the plan t299u's fourth correction (Remarks ,).

• *Thermal-balance domain* (draft). The finite balance carries the product (initially uncorrelated Gibbs-reservoir) hypothesis, which is part of I-C-Th-CERT's definition of a finite implementation; for correlated inputs use Proposition . Adopted.

• *Monoid scope* (draft). Floor invariance is for the specified spectator lift with active code and access contract fixed, not for every host-preserving declaration change; a capacity promise can restrict admissible padding. Adopted (Proposition (f), Remark).

• *Categorical attribution* (draft; also the plan t299u's third correction). Oai069-A thm:category is a dagger equivalence $\mathrm{Loc}_d(E) \simeq \mathrm{bigoplus}_{k=0}^{d-1} \mathrm{Hilb}_{\mathrm{fd}}$ that assumes Hermitian structures; it is not the Family 069 irrational-level assertion. Adopted (Remark).

• *Version-1 regularity cross-reference* (draft). Verified; recorded as E-8 above.

• *Execution and provenance* (draft). Rejected as written: the checks were executed, the parents and records are full byte copies hashed equal to the site, and the build is pinned (DC-12).

• *The actual monoid9 sentence* (plan t299u, first correction). Cite the sentence of

prop:RC-monoid9/prop:VDC-monoid9 verbatim; blindness is not preservation (Remark).

• *Gibbs preservation* (plan t299u, second correction). The classification proof uses Big02-A prop:v6-thermal(a); the identity, dephasing and replacement criteria are (b)–(d) (Lemma).

User draft t298u: integration and verdicts

The follow-up t298u (``for the Big03-A; please also refer to the attached new findings") supplies the draft ``Big03-A: New Findings for a Proposed Insertion", saved verbatim as attached_t298u.tex (sha256 cbc5f1f47712da522abdc65d6312f5d5d1dabec655ee942748ef2d22799c31b5, 1147 lines; check Big03-44). It is folded into version 2 (no version 3); the plan t299u treats it as the version-2 insertion block. Each item was re-proved or checked locally. Where it overlaps a t297u item, one statement is kept in its stronger verified form under the earlier label. Verdicts: *verified*, *verified with correction*, *rejected as written*. toprule Draft item Verdict Where and how Checks

midrule endhead ``Plan-only boundary" rejected as written superseded by executed checks, hashed copies and a pinned build (DC-12); insertion-only kept 32, 44, 55

``Standing restrictions" verified standing ledger of version 1 kept verbatim; same restrictions 42, 55

``What is new" verified summary paragraph of version 2 —

rem:R-RC-coef verified Rem. (same label); identity re-checked 34

rem:R-chi-slot verified with correction Rem. ; χ for varkappa$_0$ replaced (DC-14) 35, 45

prop:R-adjacent-injectivity verified with correction merged into Prop. (b)–(e) (DC-14) 35, 45

``Additive qualification" table verified Rem. ; matches Big03-13, 14 of version 1 45

prop:R-vac-sep verified with correction merged, Prop. (e),(f); hypotheses (DC-15) 36, 46

rem:R-further-vacuity verified with correction merged into Rem. (DC-16) 33, 59

lem:R-thermal-classification verified with correction Lemma ; cites prop:v6-thermal(a) (DC-17, E-R8) 47

lem:R-restricted-sandwich verified merged into Prop. (b) (identical duals) 37, 48

prop:R-O6-restricted, eq:R-restricted-minimax verified Prop. (same label), randomized decisions (e), samples (f); value identical (PC-33) 37, 48, 49

cor:R-restricted-gap verified with correction merged into Prop. (d) (DC-22) 37

cor:R-restricted-mixtures verified Cor. 50

rem:R-balance, eq:R-balance-new verified merged into Rem. 38, 51

prop:R-balance-correlations verified Prop. 51

prop:R-monoid-sep verified with correction merged, Prop. (f); ε^* defined (DC-18) 39, 52

``Additional monoid source lines" verified with correction Rem. , the actual sentence (DC-21, E-R7) 33, 56

rem:R-O1 verified merged into Rem. 39, 52

prop:R-ratio verified merged, Prop. (e) 40, 53

rem:R-additional-OpenAI verified merged into Rem. 41, 54

E-R1–E-R5 verified adopted; E-R5 recorded as E-8 60

E-R6 rejected as written superseded (DC-12) 32, 44

Checks Big03-32–43 (contracts) verified executed as Big03-44–55 (DC-19) 44–55

``What remains unverified" rejected as written the four locators read in full (DC-13) 33, 44

``Unchanged stopping boundary" verified Rem. —

Bibliography verified with correction full hashed copies (DC-20) 44

``External retrieval limitation" rejected as written all four records retrieved, byte-identical (DC-12) 32, 44

bottomrule No mathematical statement of the draft is rejected. The items ``rejected as written" are provenance paragraphs; they are replaced, not weakened.

Draft corrections (continuing from DC-11 of version 1). 11

• *Provenance.* The draft says no compilation, checker execution, hash verification or repository operation is asserted, that its checks are contracts with no ``pass'', and that read-only retrievals of Big02-A, nuADaM01-A, Red06-G-DSS-CERT and V-DST-DSS-CERT failed. For this build those four records and every other parent are full byte copies equal to the site GETs (Appendices ,); every contract was executed; the build is pinned and byte-identical. The manuscript itself asserts no compilation as a scope line.

• *Locators known only by summary.* prop:VDC-coefid9, prop:RC-monoid9, prop:VDC-monoid9 and thm:v2monoid were read in full; their exact content is recorded in PC-13, PC-16 and PC-15. The attributions are no longer conditional on summaries; they remain source records.

• *χ for* varkappa$_0$. The draft writes the V-DST source-normalization coordinate as χ. On this sheet χ is the coupling of $G + \Lambda g = \chi T$, and in the Einstein normalization varkappa$_0 \chi = 1$ (PC-12). The coordinate is written varkappa$_0$; the draft's $s(\chi) = a/\chi$ is $s(\text{varkappa}_0) = a/\text{varkappa}_0$, with the same formulas.

• *Vacuum hypotheses.* thm:v5-vac assumes a C^5 metric on a four-manifold and a symmetric divergence-free T; constancy of R on each component of an Einstein region is part of its conclusion (b), not a hypothesis. The draft's (a)–(c) are correct under those hypotheses.

• *Further vacuity.* The three prop:s2-vac environments are byte-identical to each other and to those of Hawk07-E-CERT, VC-OB-1-CERT and Hawk07-F/G/H-CERT (eight sheets). The draft's sheet-specific descriptions are readings of the sheets' hosts (their titles), not of differing statements.

• *Thermal classification.* The draft attributes the classification to prop:v6-thermal without naming (a); its necessity proof uses (a) (E-R8). The parallels prop:RC-deph10 and thm:v5dephase are as stated.

• *Recovery floor.* The draft's ε^* is not defined in the draft; it is defined in Proposition (f) as the referenced optimized recovery error, matching Big02-A cor:v5-monoid(a).

• *Check identifiers.* The draft's Big03-32–43 collide with the executed checks of the plan t297u. They are executed as Big03-44–55, in the same order: draft 32 → 44, 33 → 45, …, 43 → 55.

• *Bibliography.* The draft's ``supplied excerpts and plan locators'' are replaced by full hashed copies; the sheet cites by textbackslash src with the source label.

• *Monoid paraphrase.* ``A further spectator-monoid comparison'' and ``does not turn operator-space invariance into selection of a source normalization'' are replaced by the actual sentence (E-R7).

• *Restriction gap.* The draft's cor:R-restricted-gap combines the scalar case with the general gap. The gap $\frac{1}{2} - r = 1/(2Z(\beta)Z(-\beta))$ holds for every H (Proposition (d)); the scalar case gives $r = \frac{1}{2}(1 - \frac{1}{d^2})$, gap $1/(2d^2)$.

Version 2: further source records and hashes

Read-only copies, each byte-identical to https://enter.grok.me/api/manuscript/<ID> (GET 2026-10-24). The thirteen version-1 parents were fetched again and are byte-identical to the hashes in Appendix . The rows below include the user draft t298u, the plan t299u and the eight records fetched for it (Hawk07-F/G/H-CERT, Oai280-B, Oai280-C, Oai282-B, Oai211-A, Oai212-A). toprule Record sha256

midrule endhead Hawk07-C-CERT-v6.tex
fcb6b12ae27cbe3f6fca50a1bbe4e009f85e472bf3908451b2ea9b76a9840250

Hawk07-C-Dyn-CERT-v6.tex 97397c8357a69bdd7939b7415d64364678d8582dd9e8738df600ee18f2e2afea

Hawk07-D-CERT-v6.tex 606814b9bed06c8f0652a36546e364a5ba64c3daad118ff6cbac133db42aefe0

site GET Oai280-A ff66f0b8a1e80f53a7044afc714d41e66eb7b15c4c5d276f3f96b2644e11b28c

site GET Oai282-A fc3ab1c2de3e01f6235c02459b22ee87462b13a72dee0059da00ff02d75a45ac

site GET Oai069-A 7f06f8c8810573387221d9f0483845aa87d1d4e5dbda7499d828fcaed1090ab3

PLAN_t297u.md 54b2b711fe208f84f0b556c666868f8b59269b0b6c2af8d58104d72dac4ffd6c

v1 MANIFEST-Big03-A-v1.sha256 70e9eb919c63c8f2d1dd070b3f7729a63f2b837426aa8709d708f6adb91842a1

v1 Big03-A-v1.tex 52254a9b1b31588400251b706d76bd0eb331cac7e7753fd8b7dcaf10b286f47d

user draft attached_t298u.tex cbc5f1f47712da522abdc65d6312f5d5d1dabec655ee942748ef2d22799c31b5

PLAN_t299u.md 19976a4b02d545b5d24d3e84c8388b72bcb85b58fed09db4426349bb9a37d9f5

site GET Hawk07-F-CERT 9531c5a6978cf42a50b54e1960bc905ec4877e0fab782c200a141273ea7663cb

site GET Hawk07-G-CERT 7728b34a79caa705afeb4a79ab436c9c43b29ee4b90f0628cb97422fa2539aef

site GET Hawk07-H-CERT 922794371db55ccbaf4ff6c45654dbc64c8361635c848a6a0f37c46c79701b8f

site GET Oai280-B 5aebd1cbaa4b6364a09f706befd9b2121a26e80b41b6872bca52d897099d6a5c

site GET Oai280-C d8e031657fe90e09747209ac71a1960d22de36b7f362c2b671c199a23a129b5b

site GET Oai282-B d42f3cdeed913ef22ba08d5d088a760cd03b77a0a28d333195404c66b99a9063

site GET Oai211-A 5dd142def2488c8fd60a8699e8e4603cec272145defefb7c78fafdc3ddd5e834

site GET Oai212-A e71ec3476d303ea4c0394ff7f8bb4fec11c6ca9dd1d12f3f81a36bd079ab74b5

bottomrule

Version 2: build

Pinned build as in Appendix (SOURCE_DATE_EPOCH=1792627200, FORCE_SOURCE_DATE=1, PYTHONHASHSEED=0, TZ=UTC). The script rebuild_Big03-A-v2.sh assembles this source from the frozen version-1 source and the inserted parts, checks that version 1 is an ordered line-subsequence of the result, builds twice and compares the PDFs byte for byte, reruns the version-1 program unchanged and the version-2 program (Big03-32–60), and verifies the manifest with sha256sum -c. The manifest lists the three inputs PLAN_t297u.md, attached_t298u.tex and PLAN_t299u.md. This records a build. The manuscript asserts no compilation as a scope line.

Version 3: plan t336u, verdicts and corrections PC8-1 to PC8-22

The plan t336u (sha256 in Appendix) is binding on scope. Each attribution in it was checked against the site record; the verdicts are below. Plan S S 1–7 are all carried out: S 1 in Sections –, S 2 in Section , S 3 in Section , S S 4–5 in Section , S 6 as the structure of Part III, and S 7 in Section . toprule Item Verdict and correction

midrule PC8-1 **Corrected.** Big01-A thm:adaptive, thm:thermal-ident, thm:dim-exact, thm:vacfibre, cor:P5, thm:P2 do not exist in the Big01-A site record, which is version 5. They are not cited; their content is proved locally (Theorem , Propositions –, , Theorem). The closest existing statement for cor:P5 is Big01-A thm:Efuture. The Big01-A record contains no redshift-drift text.

PC8-2 **Corrected.** Big05-A thm:Big05-flagship states constancy for *geometric observables* and geometric adaptive protocols on its split fibre, not for ``every split-independent observable''. The indicator and ratio risks come from its quotient and Le Cam theorems. Big05-A prop:Big05-orbit-split: held.

PC8-3 **Corrected.** ``Dark capacity is not a host functional'' is not in Big02-A def:dark, which classifies dark capacity operationally (D1–D4). It is Big05-A prop:Big05-dark(a), for measures that increase when idle qubits are adjoined.

PC8-4 **Corrected.** Big02-A thm:coef makes the thermodynamic labels T, S, N injective in the slot; it is not a statement about ``dark-capacity labels''.

PC8-5 **Held with qualification.** Big02-A thm:v6-early(a): the *recovery* errors $0, 1 - 1/d, 1 - 1/d^2$ are κ-free. By part (b), the undecoded Gibbs-replacement error depends on κ for non-scalar H_S.

PC8-6 **Held.** Big04-A-coeff thm:C-adaptive: coefficient-blind adaptive experiments have κ-independent laws (packing $\leq 1/M$, two-point bound).

PC8-7 **Corrected.** Big04-A-coeff thm:C-generic: for $M \geq M^*(m) = \min(m - 1, 3)$ readouts the non-identifying set is Lebesgue-null; for $1 \leq M < M^*(m)$ neither property is generic. The plan's ``only with enough coefficient-sensitive data'' is made precise in this way.

PC8-8 **Corrected (scope).** Big04-A-coeff thm:C-worstcase concerns the worst-case error of *one exact readout* (

$W = \infty$ iff a sign condition fails), not adaptive experiments.

PC8-9 **Held.** DS-OB-1-fibre thm:F-einstein: effective rank one on Einstein regions, with the stated kernel. On this host the same rank and kernel are already in Proposition (e).

PC8-10 **Corrected (scope).** DS-OB-1-fibre thm:F-generic: rank four is open and dense in the C^k topology on Lorentzian metrics over an open region. It is not a statement within the fixed Einstein-host class (Proposition (e)).

PC8-11 **Held.** DS-OB-1-fibre cor:F-ranknotsel: rank does not imply selection.

PC8-12 **Held.** Big04-A thm:DR-relative: sharp relative risk $(u - \ell)/(u + \ell)$, with endpoint prior; radiation instance $\tanh(\frac{3}{4}\operatorname{artanh}\delta)$.

PC8-13 **Held.** Big04-A prop:DR-Nrel: the late dimension label; at $K = H$ it equals this sheet's r_N (Corollary).

PC8-14 **Held.** Big04-A thm:DR-O6: a restricted O6 minimax $e(\beta)/2$; O6 stays partial.

PC8-15 **Recorded.** Oai365-A, Oai265-A, Oai280-A, Oai282-A, Oai069-A and the OpenAI catalogue changed since the version-2 fetch only by added browse-link lines, plus a bibliography in the catalogue. The version-2 statements stand.

PC8-16 **Corrected.** Neither I-D prop:v5-u6 nor Hawk05-B thm:page mentions McVittie; the plan's McVittie sentence is a separation made here, not a statement of those records.

PC8-17 **Held.** Big05-A thm:Big05-futures (range $[c/H_{\mathrm{E}}, \infty]$ under the NEC) and Big05-A thm:Big05-drift (under its drift contract).

PC8-18 **Held.** Big04-A-coeff thm:C-equiv: one orbit, with elasticities $(\frac{3}{4}, -\frac{3}{4}, 1, -1)$.

PC8-19 **Corrected.** ``Placement-blind or coefficient-blind data" is not sufficient: placement blindness does not imply coefficient blindness (Proposition). The hypothesis is the actual-process one of Definition .

PC8-20 **Corrected.** ``A Gibbs state at the named temperature identifies κ only when the coefficient is supplied": an exact calibrated Gibbs state is itself a coefficient-sensitive datum, whether or not an input is named κ (Proposition).

PC8-21 **Corrected.** ``The orbit is confounding only when the coefficient is omitted": in Big04-A-coeff prop:C-orbit it is confounding only when α is not supplied (Proposition).

PC8-22 **Corrected (notation and strength).** The plan's slot ``β" is β_{res}; β_{eval} is an evaluation argument (Remark). Plan S 3 asks for a documentary comparison; a locally proved proposition is given instead, which is stronger.

bottomrule

Version 3: prediction layer t337u, verdicts X8-1 to X8-22

toprule Item Exact statement or locus, and verdict

midrule X8-1 Three-level split (framework / conditional / testable). **Held**; each result is tagged.

X8-2 Theorem 1, worst-case error $\geq \frac{1}{2}(1 - 1/d^2)$. **Held, scope corrected**: it needs a declared future class sharing the past, since on the fully prescribed de Sitter host the horizon is fixed. The bound is sharp, and an explicit smooth NEC witness pair is supplied (Theorem).

X8-3 ``Combine Big03-A's supplied-data map with Big02-A's smooth-future separation." **Held**: Big02-A thm:IV(c).

X8-4 ``κ does not tell whether acceleration persists, whether a horizon exists, which messages reach us." **Held**; both witnesses accelerate (Theorem (c)).

X8-5 Detector detailed-balance hypothesis. **Held as a testable hypothesis** (Definition).

X8-6 Citation doi:10.1007/s00023-025-01618-3 for ``detailed-balance effective temperatures are defined through this rate ratio". **Corrected**: the metadata were verified (Passegger, Verch, Ann. Henri Poincaré 27(9), 3507–3551), but the abstract concerns detector transition rates in a non-equilibrium steady state and does not state that definition. The detailed-balance (KMS) temperature is attributed instead to arXiv:2204.00359, whose abstract

states it.

X8-7 arXiv:2204.00359 (dynamical spacetimes do not automatically give the stationary response). **Held** per its abstract: A. Conroy, ``Unruh-DeWitt detectors in cosmological spacetimes", Phys. Rev. D 105, 123513 (2022).

X8-8 Theorem 2, multi-gap relation. **Held** (Theorem (a)).

X8-9 Calibration bound $2\pi\Delta/(HL_{+}) \le \kappa_{\mathrm{eff}} \le 2\pi\Delta/(HL_{-})$. **Held**, sharp; strengthened with the window width and exact relative risks.

X8-10 arXiv:2211.14747 caution. **Held** per its abstract: W. Zhou, S. Cheng, H. Yu, ``Understanding thermal nature of de Sitter spacetime via inter-detector interaction" (2022).

X8-11 ``This converts the calibration discussion into a measurement interface." **Corrected**: a detector rate ratio under the tie is a coefficient-sensitive datum, a supply, not a derivation (Theorem (b)).

X8-12 Theorem 5, critical H. **Corrected**: $K \ge 2$ is required, since $K = 1$ violates the Singleton inequality once $2r > n$. Otherwise held. It is Big02-A thm:I(c) solved for H (Theorem).

X8-13 Theorem 3, $\ddot{a} > 0$. **Held** (symbolic check).

X8-14 Theorem 3, threshold $p > 1$; χ_e, R_e. **Held**.

X8-15 Theorem 3, $e_{\min}$, traversal for $p \le 1$, $\varepsilon \to 1$. **Held**.

X8-16 Theorem 4, envelope, regions, $0 \le \varepsilon \le 0.2 \Rightarrow R_e \le 1.25\, c/H$. **Held**; sharpness, $a \to \infty$ and the intermediate-band risk added.

X8-17 Theorem 5, extrapolation remarks. **Held as non-claims**.

X8-18 Relaxation hypothesis and $H^2(a)$, $H(z)$. **Held** (symbolic check).

X8-19 $j - 1 = (2\alpha - 3)(q + 1)$. **Held**; $q + 1 = \varepsilon > 0$ on the branch, so the ratio is defined.

X8-20 Redshift drift and the MNRAS 488(3) 3607 citation. **Held**; re-derived locally. Metadata: Alves, Leite, Martins, Matos, Silva, MNRAS 488(3), 3607–3624 (2019), doi:10.1093/mnras/stz1934. The URL article number is not copied.

X8-21 Branch table. **Held**; for $H_\infty = 0$, $0 < \alpha < 1$, $R_e = c/(H(1 - \alpha))$ is added.

X8-22 $\alpha = \frac{3}{2}$, $j = 1$, and doi:10.1140/epjc/s10052-017-5005-4. **Held**; $j = 1$ is proved locally. The citation (Zhang, Li, Xia, EPJC 77, 434 (2017)) is used only for the standard q, j; its abstract does not state the $j = 1$ benchmark. The results table is kept without a ratings column, with a row added for Theorem 1.

bottomrule

Version 3: findings draft t339u, verdicts F9-1 to F9-30 and corrections DC-23 to DC-28

Each item of the draft was re-proved here. The verdicts are *held* (true as stated, possibly merged), *corrected* (true after the stated change), *rejected* or *conjecture*. No item is rejected, and none is left as a conjecture. No hash, number or citation of the draft was copied without verification. toprule Item Draft item Verdict and v3 locus

midrule F9-1 Def. coefficient-blind adaptive acquisition Held; merged with the t336u experiment definition, with an explicit memory recursion (Definition).

F9-2 Adaptive certificate (i) common laws Held (Theorem (a)).

F9-3 (ii) two-point and unbounded Held ((b)).

F9-4 (iii) finite list and interval Held ((c)).

F9-5 (iv) packing Held ((d)).

F9-6 (v) stopping and conditioning Held ((a)). The t336u relative-loss item (e) is added.

F9-7 Cor. supply (i)–(iii) Held; (ii) is strengthened by the simulation statement (Corollary).

F9-8 Cor. (iv) interval coverage Held.

F9-9 Placement-blind counterexample Held; the proof is completed (decoder composition, AM–HM) (Proposition

(a)).

F9-10 Marginal-blind XOR Held ((b)).

F9-11 Gibbs identifiability (i) Held; the qubit witness from t336u is merged (Proposition (a)).

F9-12 (ii) scalar, (iii) κH units Held.

F9-13 (iv) finite copies Held.

F9-14 Common thermal operations Held; strengthened with commuting unitaries and $\mathscr{U}_{\pi}$ (Proposition).

F9-15 Exact dimension (i) Held (Proposition (a)).

F9-16 (ii) bound, (iii) integer part Held; tied to the interval risks.

F9-17 (iv) supply does not supply equality Held.

F9-18 Def. independent source coordinates Held; instantiated on this host (Definition).

F9-19 Fibre theorem (i)–(iii) Held; the t336u product structure is merged (Theorem).

F9-20 (iv), (v) Held.

F9-21 Einstein region (i), (iii), (iv) Held. Rank one and the kernel are already on this sheet (Proposition (e)), as the draft says (Proposition).

F9-22 Box risk $\frac{1}{2}[(b-a)+L(e-d)]$ Held; the image $[a-Le, b-Ld]$ is verified (check Big03-68).

F9-23 Attribution witnesses; rank vs value Held; the ρ_{v} midpoint risk and the missing-declaration item of t336u are merged (Proposition).

F9-24 Power-law relative risks Held; the elasticities of t336u are merged (Proposition).

F9-25 Exponential label Held. The draft's exact comparison is kept, since it is stronger than the t336u sufficient condition $s \geq 1$; the threshold interval $(1-\delta^2, 1)$ is added (Corollary).

F9-26 Label orbit vs confounding orbit Held; attribution corrected (DC-23) (Proposition).

F9-27 Readout-rank criterion Held, including the radiation matrix and the determinant $\frac{3}{4}$; attribution corrected (DC-24) (Proposition).

F9-28 Documentary: future Held; $\dot{R}_e = H_a R_e - c$ and the homogeneous solution Ca are verified (Documentary record).

F9-29 Documentary: dark, sampling, recovery, catalogue Held, with DC-25 (Records –).

F9-30 Qualifications, status table, open items Held, merged into Section ; corrected by DC-26 to DC-28.

bottomrule

Draft corrections.

DC-23 The draft's ``radiation dictionary'' $T_{\mathrm{r}} \propto (U\kappa^3/\alpha)^{1/4}$ is not this sheet's dictionary (Proposition has no α). It is the Big04-A dictionary, as recorded in Big04-A-coeff prop:C-orbit.

DC-24 The draft calls thm:C-generic and the generic-rank comparison ``unprinted''. Both Big04-A-coeff thm:C-generic and DS-OB-1-fibre thm:F-generic are printed in the site records; they are cited documentarily, and their proofs are not imported.

DC-25 The draft's bibliography gives Hawk05-B as ``version 1''. The Hawk05-B site record states no version.

DC-26 The draft's verification boundary (``no checker execution, hash verification, byte-identical build or compilation is asserted'') is true of the draft. For this build it is superseded: the checks and builds are executed and recorded (Appendices ,).

DC-27 The draft's bibliography rests on ``supplied attachments and passages''. Each is replaced by the hashed site record (Appendix), and the version of every record was re-read: Big01-A 5, Big02-A 6, Big04-A 5, Big04-A-coeff 5, DS-OB-1-fibre 5, Big05-A 3, En04-A 3, En04-B 4, I-D 5.

DC-28 The draft's ``further inherited boundaries'' (Route-B successor, Res02-A Q1–Q4 and A1–A2, the last

reading bars, continuum acquisition) occur neither in version 2 nor in the cited records, so they are not carried as inherited items.

Version 3: crosswalk of the three inputs

toprule v3 result t339u draft t336u plan t337u

midrule Def. , Thm. def:R-v3-blind, thm:R-v3-adaptive S 1 (adaptive) –

Cor. cor:R-v3-supply S 1 (evaluation only) –

Prop. prop:R-v3-blind-boundary S 1 (PC8-19) –

Prop. prop:R-v3-thermal-ident S 1 (PC8-20) Thm 2 (b)

Prop. prop:R-v3-common-thermal S 1 –

Prop. prop:R-v3-dim-exact S 1 –

Def. , Thm. def:R-v3-product, thm:R-v3-fibre-nonselection S 2 –

Prop. prop:R-v3-vacuum-box S 2 –

Prop. prop:R-v3-split-rank S 2 –

Prop. prop:R-v3-relative-alignment S 3 Thm 2 (c)

Cor. cor:R-v3-N-relative S 3 –

Prop. prop:R-v3-orbit S 1 (PC8-21) –

Prop. prop:R-v3-readout-rank S 1 (C-generic) –

Records – doc:R-v3-* S S 4–5 –

Thm. doc:R-v3-future (part) S 4 Thm 1

Def. , Thm. – – Thm 2

Thms. – – S 4 (drift) Thms 3–6

Section sec:R-v3-status S S 6–7 table, rule

bottomrule Where the draft and the plan overlap, one statement is kept. It is the draft's in structure, and the stronger of the two in content (F9 column). The draft's labels are kept wherever they do not collide with version 2; the draft's section labels sec:R-v3-* are replaced by sec:v3*.

Version 3: label and statement verification

Every label cited in Part III was located in the site record named; the existence table is generated from the records by srclabels_Big03-A-v3.py (check Big03-61). The statements were read in full, and the corrections are the PC8, X8 and DC items above. Labels named by an input but absent from the record named: Big01-A thm:adaptive, thm:thermal-ident, thm:dim-exact, thm:vacfibre, cor:P5, thm:P2 (PC8-1). This sheet's own version-2 labels cited in Part III all exist in the frozen version 2 (check Big03-61). toprule Record Label Found

midrule Big01-A thm:Efuture yes

Big02-A def:dark yes

Big02-A lem:singleton yes

Big02-A thm:I yes

Big02-A thm:II yes

Big02-A thm:IV yes

Big02-A thm:coef yes

Big02-A thm:v6-early yes

Big04-A prop:DR-Nrel yes

Big04-A thm:DR-O6 yes

Big04-A thm:DR-relative yes

Big04-A-coeff prop:C-orbit yes

Big04-A-coeff thm:C-adaptive yes

Big04-A-coeff thm:C-equiv yes

Big04-A-coeff thm:C-generic yes

Big04-A-coeff thm:C-worstcase yes

Big05-A hyp:Big05-closure yes

Big05-A prop:Big05-dark yes

Big05-A prop:Big05-orbit-split yes

Big05-A thm:Big05-drift yes

Big05-A thm:Big05-flagship yes

Big05-A thm:Big05-futures yes

DS-OB-1-fibre cor:F-ranknotsel yes

DS-OB-1-fibre thm:F-einstein yes

DS-OB-1-fibre thm:F-generic yes

En04-A thm:P2 yes

En04-A thm:magic-fibre yes

En04-B thm:curvature-sampling yes

Hawk05-B thm:page yes

I-D prop:v5-u6 yes

Big01-A thm:adaptive (named by the plan) absent (PC8-1)

Big01-A thm:thermal-ident (named by the plan) absent (PC8-1)

Big01-A thm:dim-exact (named by the plan) absent (PC8-1)

Big01-A thm:vacfibre (named by the plan) absent (PC8-1)

Big01-A cor:P5 (named by the plan) absent (PC8-1)

Big01-A thm:P2 (named by the plan) absent (PC8-1)

bottomrule

Version 3: source records and hashes

All records were fetched read-only by GET from https://enter.grok.me/api/manuscript/<ID> on 25 October 2026. The external metadata were fetched from https://export.arxiv.org/api/query and https://api.crossref.org/works. The rows are generated from the files (check Big03-62). toprule File sha256

midrule PLAN_t336u.md 9885e5f06a5326b83099580940a83cd3e26dc240b05de1aa5f8ddc692d0c5427

PLAN_t337u.md 240ba4ff717fcec73b332da0e6cdbbfbef51af4ef1d5c53f01cee54726735a0e

findings_t339u.tex 843d031ce192ff204e4b8c9904e2a68c730e166458864696dc3310af39d8c982

Big03-A-v2.tex (frozen base) c71007c5e5455227925f625ff9fc488e369cbd66a64b95799f8f34e68519bd6a

api/Big01-A.tex 5fa2b917714b06379068ca4c0d71566fbbc13c50153e7a3ad9822ca03246a312

api/Big02-A.tex 1d8fc18c752c82edb1235282cbd56ccd8540e41ae675589337bbd6622ffa8f7a

api/Big03-A.tex d0c34c2c8393bffb87d695478db99a16111fe86ab1f3f2b3a69a38d5c25ff1be

api/Big04-A-coeff.tex 9276db3c2eca392e3af5af1e960230367160d061874b332b4dc7342d5859ca70

api/Big04-A.tex 0bb4d9b2dd7dcfbef9da194f6be160ae1c8b4a756c0d5550b817df31226a352d

api/Big05-A.tex 1788cf6f5abe4bf139f54aa18167a61c1130cdb6a0aacff84f2f45521d5946a3

api/DS-OB-1-fibre.tex 4626dbb721ab0c0cb1f374699897dde85d5cc20f599f1a3470a620d286f425f8

api/En04-A.tex b4cb98c038318b366c79b8fe932250e3e626e6e2e75edcb0d61e70bfc118568c

api/En04-B.tex 60a0c284e6415e9cf3b64a7362af8ad06a4a0ec2f25bda26b1467d7966c4045a

api/Hawk05-B.tex e8ae780e771c04d876d91505de79fb11e47c89925596cb67f50db641945470fd

api/I-D.tex b87e0d92b2c78f2500ba9622e0fb57a8ae4d345fbb88074026e1518fdcd1fdbb

api/Oai069-A.tex d663899b31d3adf337e21d280501a7c0a4d7ac077598e06bbf0d738b7c3d2635

api/Oai265-A.tex e2b9adea4ae87a1ebc1428135c1cf91e42b7a16f353205bbc19967915caceb6f

api/Oai280-A.tex 735fa27e77b7303f748e133f0128eb88b0078e95a02c35b0d1c1a68ffbb47c5b

api/Oai282-A.tex d62e6cec58b7d93230a9334fd0c8149879a24922e836348886019a007932efe1

api/Oai365-A.tex e9cc18ac2e124254a760d4193e8447404b132464678c459e722b8174ff1faf95

api/OpenAI.tex 9a20a47b380d2de3d68e80a47877c563460260d7acf8aafdcab6aa97285ca5a8

refs/arxiv.xml f058442a96c66ac8e84cad71af59d0c41423cd01438a198f2bcb9608b6e36a16

refs/arxiv_zhang.xml 507c96f8b1953f0263a19138e63c023714cc6c8681f6bdcde4e96958754bb739

refs/arxiv_alves.xml e615b73056567ff13b25039fb9d5e860935324a488d96adaa17a1fd43a60817d

refs/cr_10.1007_s00023-025-01618-3.json
569951adc6e44fc8bdbe3d6614e959627c2751223e44aeb8715ec58cd48162d4

refs/cr_10.1140_epjc_s10052-017-5005-4.json
27d8d960d48108630158150ca50aa2553ceb17aab3260b7aff4bc6a3e642cedd

refs/cr_10.1093_mnras_stz1934.json 5d89e7acbe7f66571481b644deb41646ab4fea921a9d8107c588aa2c4ac41c25

bottomrule External records (Source record; not a premise): Conroy, arXiv:2204.00359, Phys. Rev. D 105, 123513 (2022); Zhou, Cheng, Yu, arXiv:2211.14747 (2022); Passegger, Verch, Ann. Henri Poincaré 27(9), 3507–3551, doi:10.1007/s00023-025-01618-3; Zhang, Li, Xia, Eur. Phys. J. C 77, 434 (2017), doi:10.1140/epjc/s10052-017-5005-4, arXiv:1601.01758; Alves, Leite, Martins, Matos, Silva, MNRAS 488(3), 3607–3624 (2019), doi:10.1093/mnras/stz1934, arXiv:1907.05151.

Version 3: build

The source is assembled by assemble_Big03-A-v3.py from the frozen version 2 by insertion only, at five anchors: the title block (before verb ||), the abstract paragraph (before verb ||), the ``what is added" paragraph (before the standing-ledger paragraph), Part III (before verb | appendix |), and these appendices (before the bibliography). It is built twice with pdfLaTeX under SOURCE_DATE_EPOCH=1792627200, FORCE_SOURCE_DATE=1, PYTHONHASHSEED=0, TZ=UTC, LC_ALL=C, in a new session. The two PDFs are byte-identical, with 0 errors, 0 undefined references and 0 duplicate labels. The rebuild script rebuild_Big03-A-v3.sh repeats all of this and verifies the manifest. Nothing is pushed, registered or written to the site; the wiring payload has wired:false. The hashes of the deliverables are in MANIFEST-Big03-A-v3.sha256; a document cannot contain its own hash.

Version 3: checks Big03-61 to Big03-78

The program checks_Big03A_v3.py runs every check with a negative control. Seven mutation tests (mutations_Big03A_v3.py) confirm that a damaged source fails the targeted check. The version-1 and version-2 programs are rerun unchanged, with the results stated in Section . toprule Check Content

midrule Big03-61 Every label cited in Part III exists in the named site record, the six PC8-1 labels are absent from Big01-A, and every cited version-2 label exists.

Big03-62 The source-record hashes equal the fetched files; the plan, draft and base hashes match.

Big03-63 The standing ledger is verbatim in the abstract and in Section ; ``No quantum coefficient is admitted" is unchanged; the authorship line is present; there are no ratings and no numerical κ; a non-claim follows every Part III result.

Big03-64 Adaptive: random coefficient-blind adaptive quantum experiments (memory, stopping) give identical laws at several κ; a coefficient-sensitive control differs; the XOR and replacement counterexamples ($\frac{3}{4}$ constant, population injective).

Big03-65 Gibbs: the inverse formula, the mean-energy derivative against finite differences, the qubit bijection, and mutual absolute continuity for finite copies.

Big03-66 Thermal operations: the dephasing unitary commutes with $\mathrm{H}_S \otimes I$ and reproduces $\Delta_{\mathscr{B}}$; implementations are β-free; the Gibbs-replacement output varies (control).

Big03-67 Dimension: $C/\log D$ gives integer N; floor intervals; bound.

Big03-68 Fibres: split witnesses (NEC, ratio range), the ρ_{v} midpoint, the box image and risk by grid search, and the kernel.

Big03-69 Relative risks: $\tanh(|p|\operatorname{artanh}\delta)$ against a brute-force minimax; the endpoint prior; the r_N threshold; the orbit; the readout criterion; the radiation determinant $\frac{3}{4}$.

Big03-70 Insertion-only: every line of version 2 appears verbatim and in order.

Big03-71 Build: two byte-identical PDFs, 0 errors, 0 undefined references, 0 duplicate labels.

Big03-72 Forecast 1: witness pair (C^∞ junction, $\dot{H} \le 0$, $\ddot{a} > 0$, horizon c/H vs none).

Big03-73 Forecast 2: multi-gap identity, the sharp window and its relative width.

Big03-74 Forecast 3: symbolic H, $\ddot{a}/a$, χ_e, R_e, $\varepsilon \to 1$, and numerical integrals for $p \le 1$.

Big03-75 Forecast 4: the envelope on random ε histories, sharpness at constant ε, and 1.25.

Big03-76 Forecast 5: Singleton on explicit codes ($[[4, 2, 2]]$, a five-qubit code), the $K = 1$ counterexample, and H_{crit} algebra.

Big03-77 Forecast 6: symbolic history, jerk relation and $\alpha = \frac{3}{2}$, and numerical redshift drift against direct light propagation.

Big03-78 Draft t339u integration: every draft result label maps to a v3 label, with no duplicate theorems, and the draft hash.

bottomrule

References

J. Watrous, Simpler semidefinite programs for completely bounded norms, *Chicago J. Theor. Comput. Sci.* 2013, Article 8. External; source record; not a premise.

Bureau International des Poids et Mesures, *The International System of Units (SI)*, 9th edition (2019), and *SI defining constants*. External documentary record for the exact values of h, c, k_B; not a premise for their identification with a host slot.

National Institute of Standards and Technology, *CODATA Internationally recommended 2022 values of the fundamental physical constants*, https://physics.nist.gov/cuu/Constants/ (pages Value?bg, ?c, ?h, ?hbar, ?k saved 2026-10-24). External documentary records; not premises.